

A REVIEW ON :- FORMULATION AND DEVELOPMENT OF FACE WASH

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ABSTRACT:

Facial Skin is elegant and the ordinary soaps make it to lose texture and make it dry. Facewash is a mild cleanser acts without producing any harshness to skin. The purpose of facewash is to proclaim the cleansing, antiwrinkle, anti- acne, moisturizing and enhance the fairness of skin and thus skin look young and energetic. The present form of facewashes available in market were gel and cream state, which should be packed in large collapsible tube or plastic containers in turn difficult for the consumer to carry during their travel and being this facewash are aqueous in nature, it needs preservative to maintain the stability. The objectives of this present work is to overcome the drawbacks of synthetic facewashes and to prepare herbal facewash tablet. Facewash tablets are formulated to minimize the cost, packaging size and the utilization of harmful preservatives and easily portable. Facewash tablet was prepared with various concentration of ingredients and evaluated for parameters like pH, Irritability, Hardness, Friability, Thickness, Foaming capacity and Accelerated Stability. The present study revealed that the formulated batch (F6) produces an excellent foams and produce a fine facewash.

COSMETIC :- Cosmetic is a Greek word which means to ‘adorn’ (addition of something decorative to a Person or a thing). Cosmetics are constituted from a mixture of chemical compounds derived from either natural sources or synthetically created ones.^[1] Cosmetics designed for skin care can be used to cleanse, exfoliate and protect the skin, as well as replenishing it, through the use of cleansers, toners, serums, moisturizers, and balms; cosmetics designed for more general personal care, such as shampoo and body wash, can be used to cleanse the body; cosmetics designed to enhance one's appearance (makeup) can be used to conceal blemishes, enhance one's natural (such as the eyebrows and eyelashes), add color to a person's face and, in the case of more extreme forms of makeup used for performances, fashion shows and people in costume, can be used to change the appearance of the face entirely to resemble a different person, creature or object. Cosmetics can also be designed to add fragrance to the body.^[2]

TYPE OF COSMETICS :-

Though there are a large number of differing cosmetics used for a variety of different purposes, all cosmetics are typically intended to be applied externally. These products can be applied to the face (on the skin, lips, eyebrows and eyes), to the body (on the skin, in particular the hands and nails), and to the hair. These products may be intended for use as skincare, personal care or to alter the appearance. The cosmetics have been different type which are given below-

- Skin Cosmetics
- Hair Cosmetics
- Nail Cosmetics

FACE WASH :- Face wash is the products which are used to cleanse face without drying it out. Face wash is also commonly known as “cleanser”. Face wash product found to be equally good for all skin type. Face wash is very helpful in removing dirt, oil and provide moisture to the dry skin. Both face washes & cleansers are used to rid your face of dirt, oil, pollution etc. A cleanser dissolves away excess oil makeup and grime from your face. These are oil soluble impurities. They can be removed by a face wash too, but that might be not 100% effective. Facial skin is the delicate and ordinary soaps can cause it to lose moisture. A face wash is a mild cleanser that does the vital job of keeping skin clean, germ free smooth and fresh and moisturizes the horny layer without any harshness to the skin. So that skin look young and energetic. The purpose of face wash may be to impart cleansing, anti-wrinkle effect, anti-acne property, moisturizing effect and fairness of skin. Skin whitening agents are believed to act on the production and metabolism of melanin of the skin by inhibiting melanin production in melanocytes, reducing extent of melanin. The agent which inhibit melanin production, such as propanediol, *Evodia rutaecarpa* fruit extract, arbutin, kojic acid, vitamin C and its derivatives are used in the whitening cosmetic because of their low toxicity to melanocyte



FIG. Different typr of face wash

FORMS OF FACE WASH :-

1. Cream based face wash
2. 2. Gel based face wash
3. 3. Liquid based face wash

Face wash in powder form Types of face wash Generally a face wash suits all skin types however now a day different products are available in market that are formulated to suits different skin types for example: an oily skin face wash is made for people have oily skin conditions and does not contains oils and leaves a thin oily film on the skin.

These different types of face washes available in the market include.

1. Oily skin face wash
2. Dry skin face wash
3. Normal skin face wash Feature of face wash

FUNCTION OF FACE WASH :-

1. Removing the dead cells.
- 2 Rejuvenating the skin cells elevate stress
- 3 Removes oil, dirt and impurities.

Reduces microbial flora of skin Leave skin fresh and breathing. Gel based face wash gel A gel is a solid jelly like material that can have properties ranging from soft and weak to hard and tough. Gels are defined as a substantially dilute cross-linked system, which exhibits no flow when in the steady-state. By weight, gels are mostly liquid, yet they behave like solids due to a three-dimensional cross-linked network within the liquid. It is the cross linking within the fluid that gives a gel its structure (hardness) and contributes to the adhesive stick (tack). In this way gels are a dispersion of molecules of a liquid within a solid in which the solid is the continuous phase and the liquid is the discontinuous phase. The word gel was coined by 19th century Scottish chemist Thomas Graham by clipping from gelatin. Skin whitening herbs Skin whitening herbs is the practice of using substances, mixtures or physical treatments to lighten skin colour. Skin whitening treatments work by reducing the content of melanin of the skin. Many agents have been shown to be effective in skin whitening; some have the beneficial effects (e.g. antioxidants, nutrients) & some are a significant risk to health (for example, those containing mercury). The search for natural active compounds from natural herbal medicines or Traditional Chinese Medicines (TCMs) provides an interesting, largely unexplored area for development of new skin-care cosmetics such as natural whitening agents like melanin biosynthesis or tyrosinase inhibitors, which are able to modulate the metabolism of

pigmentation for colour of the human. Skin and it play a crucial protective role in skin whiteness, whereas antioxidants active in the oxidative stress of skin aging cells may support skin health. Melanin, which is biosynthesized by melanocyte cells in the basal layer of the epidermis, may be over produced with chronic sun exposure, melasma or other hyper pigmentation diseases. Therefore, whitening agents reduce melanin over production like hyper pigmentation of darkened age spots, whereas pigmenting agents such as melanin are designed to increase pigmentation for sun protection. However, the inhibition of melanin biosynthesis has already been described by avoiding ultraviolet (UV) exposure, inhibiting melanocyte metabolism and proliferation inhibiting tyrosinase activity or removing melanin with corneal ablation. Tyrosinase is known to be the key enzyme in the anabolism of melanin biosynthesis in melanocytes catalyzing the initial two steps of this pathway, including hydroxylation of tyrosine (one of monophenolic compounds) to L-dopa (L-3,4-dihydroxyphenylalanine; one of o-diphenols) and oxidation of Ldopa to o-dopaquinone (one of o-quinones). These o-quinones are then transformed into melanin in a series of non-enzymatic reactions. Therefore, tyrosinase inhibitors are important constituents of cosmetics and skin whitening agents and tyrosinase becomes the key target enzyme for screening and discovery of new inhibitory compounds. This is why a constant search for tyrosinase inhibitors obtained by extraction from natural plants or TCMs is underway in the hope of preventing the occurrence of this melanin over productions or hyper pigmentation disorders. The highly reactive intermediate produced by dopa oxidation and the reactive oxygen species (ROS) and other free radicals induced by oxidative stress in skin cells or by UV radiation exposure have been presented to be inappropriately processed in enhancing melanin biosynthesis, damaging DNA, probably inducing proliferation of melanocytes. The free radicals or ROS scavengers such as antioxidants may be known to reduce hyper pigmentation. Although the plant-derived anti-oxidants scavenge free-radicals it is assumed that their nature and concentration vary among different kinds of plants. However, 1, 1-diphenyl- 2 picryl hydrazyl (DPPH) is a stable radical and the DPPH free radical-scavenging assay is a simple and widely popular method for screening free radicalscavenging ability of compounds or antioxidant activity of plant extracts. Uses of ingredients As of increasing focus on skin appearance, many cosmetic and pharmaceutical companies are focusing on research that will alter skin pigmentation. There are today many known substances that can reduce the level of pigmentation in the skin. Many of these actives have a tyrosinase-inhibiting effect leading to reduced total melanin production. Some of the tyrosinase inhibitors used today is for example, kojic acid, arbutin, Evodia rutaecarpa and different kinds of vegetal or herb extracts. There are also molecules known to have an effect on the transfer of melanin from melanocytes to keratinocytes, leading to an overall lighter skin colour such as nicotinamide and soybean. Substances that increase the desquamation of the skin are also commonly used to remove excessive melanin content within the skin, for instance retinoic acid.

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METHODS MATERIALS:- The instant whitening face wash was prepared using following chemicals, apparatus and instruments. Chemicals Evodia rutaecarpa fruit extract; was purchased from BioRecurso, Parwanoo, Himachal Pradesh. Acrypol ET- 1; was purchased from Lubrizol Ltd. Mumbai. DmDmhydaintoin; was purchased from Subhash Chemicals, Vapi. Triethanol amine, glycerine, ethylene di-amino acetic acid, distilled water and perfume is available in the laboratories of college. Apparatus Apparatus such as beaker, glass slide, measuring cylinder, test tube, mortar pestle, volumetric flask and sonicator apparatus are available in the laboratories of college. Instruments Equipments such as pH meter, mechanical stirrer, Broke field viscometer (LV viscometer), beaker, thermometer, funnel and sonicator are available in the laboratories of college.

METHODS :- Preparation of face wash base Various formulations of batches were prepared according to the Table 1. The desired concentration of EDTA were weighed accurately and dispersed in hot purified water (not more than 60°C; 50 % weight of the batch size) containing desired quantity of glycerine with moderate stirring, then add desired quantity of Aqua SF-1 and dissolved in remaining amount of water (50% of batch size) then, primary surfactant (Sodium Lauryl Ether Sulfate) was added. Then, secondary surfactant (cocamidopropyl betaine) was added, then sodium metabisulfite was added, then neutralizer Triethanolamine was added, then Preservative (Euxyl K120) was added. This was finally mixed in formulation. Perfume was added in sufficient quantity in all the formulations. Prepared formulations were filled in a suitable container and labelled accordingly. These preparations were further evaluated

Phase	Contents		Base Formulation (BF)			
	BF1	BF2	BF3	BF4	BF5	BF6
A	Water	Up to 100	Up to 100	Up to 100	Up to 100	Up to 100
Aqua SF-1 (ml)	10	10	10	10	10	10
EDTA (gm)	0.1	0.1	0.1	0.1	0.1	0.1
Glycerine (ml)	5	5	5	5	5	5
B	Euxyl K120 (ml)	0.5	0.5	0.5	0.5	0.5
TEA (ml)	1.5	1.5	1.5	1.5	1.5	1.5
C Sodium	0.2	0.2	0.2	0.2	0.2	0.2
Metabisulfite (gm)						
SLES (ml)	16	17.5	19	20	20	20
Perfume	0.5	0.5	0.5	0.5	0.5	0.5
D	CAPB (ml)	5	5.5	5.8	6	6
E	Citric Acid	q.s.	q.s.	q.s.	q.s.	q.s.

PROCEDURE: -

Take Phase A material and mixed them until light clear solution form

1. . 2. Take Phase B material and mixed into phase A and mix into the product up to 20 min.
2. 3. Add Phase C material into phase A & B and mix the batch up to 20 min
3. . 4. Add Phase D material and mixed into phase A, B and C slowly and allowed to mix batch for 30 min.
4. 5. Then phase E material was taken and mixed into the phase A, B, C & D and transferred into suitable container and labeled. These preparations were further optimize and face wash base selected

EVALUATION :-

The prepared formulation were undergo through the In-Vitro evaluation and In-Vivo Evaluation. In-vitro evaluation a) Rheological Characteristics Rheological characteristics were studied for colour, clogging, sudden viscosity change and feel properties. b) Determination of pH The PH of formulations was determined using digital pH meter. One gram of face wash was dissolved in 100 ml of demineralised water and stored for two hours. The measurements of pH of each formulation were done in triplicate. Instrument was calibrated before use with standard buffer solutions at pH 4, 7 and 9. c) Determination of Viscosity 100 gm of each of formulation was weighed and transferred to beaker. The help of Brook field viscometer (LV viscometer), spindle no 3 at 10 rpm for 5 min. Before measurement declaration of face wash was done and the face wash was filled in appropriate viscosity of formulations were determined with the Wide mouth container. Samples of the face wash were allowed to settle over 30 min at the assay temperature ($25 \pm 1^\circ\text{C}$) before the measurements. Viscosity of formulation was determined using the formula. $\text{Viscosity (cp)} = \text{Dial Reading} \times \text{Factor}$ d) Spreadability determination of formulations Spreadability of formulations was determined by an apparatus suggested by Multimer et al. which was fabricated in laboratory & used for study. The apparatus consists of a wooden block, with a fixed glass slide with one end tied to weight pan rolled on the pulley which was in horizontal level with fixed slide. An excess of whitening face wash sample 1.5 gm was placed between two glass slide and a 1000 gm weight was placed on slide for 5 minutes to between compress the sample to uniform thickness weight (60gm) was added to the pan. It was calculated using the formula: $S = \frac{ml}{t}$ Where, s = spreadability in gm.cm/sec m= weight tied to upper slide l= length of glass slide t= time in seconds Length of glass slide was 11.2 cm and weight tied to upper slide was (60gm) throughout the experiment. e) Washability The product was applied on hand and was observed under running water. f) Stability study The instant whitening face wash were also subjected to the following condition of temperature and relative humidity during stability studies for 3 weeks at room temperature.

CONCLUSION:- Instant whitening face wash AF4 which was formulated showed a good rheological characteristics pH, spreadability, stickiness, homogeneity, greater active content. Hence, this study showed that F4 was the best formulation for instant whitening face wash. The instant whitening face wash concluded that it

can be applied to skin, this face wash found to be very effective, According to In-Vivo study, the product has no skin irritation after application on skin.

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