

Formulation and screening of herbal face cleanser

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ABSTRACT

The skin is the most exposed organ responsible for providing a barrier to the external environment that can resist a wide range of challenges of microbial agents and infectious agent (pathogen). Chemically synthesized drugs are used to prepare natural products such as acne face washes, antibiotic gel, and also masks are presently used in the market. Unexpectedly, these synthesized drugs show reactions and fail in treating the disease and to compete with pathogenic agents. Therefore, the acne was cured by using herbs in the preparation. In this study, strength and its effects are assessed by using the face wash, which is made by herbs. Carbopol 940 was mixed with lemon juice, papaya, cucumber seeds, extraction of pulp, aloe vera juice to form the fruit face wash gel with virtuous quality. The carbopol gel was pointed in the dishes was visible because the production of microbial agents is decreased.

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INTRODUCTION

The skin is the most exposed organ responsible for providing a barrier to the external environment that can resist a wide range of challenges of microbial agents and infectious agent (pathogen). While skin should be cared for appropriately and protected from harmful agents. Chemically synthesized drugs are used to prepare natural products such as acne face washes, antibiotic gel, and also face masks are presently used in the market. Unexpectedly, these synthesized drugs show reactions and fail in treating the disease and to compete with pathogenic agents. These are identified to give rise to irritating skin, withstand clindamycin and also redness

and swelling. Acne was caused by some microbial agents such as Propioni bacterium, S.aureaus, S. epidermidis. According to patients complaint, another medicine should be implemented to reduce the pimples [1].

In this acne therapy, aloe vera along with herbs are used as an Ayurveda medicine to show better possible treatment. Even though of other favourable conditions, the herbs conducted very less inspection to demonstrate the capability to act as anti-acne herbs such as papaya, turmeric powder, neem, etc. Except for aloe vera, remaining Curcuma longa, Hemidesmus indicus, and Rubia cordifolia produces herbal products to reduce swelling. Mild and comedo pimples may be decreased by aze-laic acid. When benzoyl peroxide is differentiated, 5% of pantothenic acid acts against P. acne bacteria when dissolved in the compound (Sato et al., 1990). Besides tetracyclines, zinc gluconate was taken orally to reduce inflammation and shows good anti-acne therapy [2].

In Present markets, fruit preparations are vigorously used to cure the pimples and from other contamination. Pimples can be mostly reduced by using papaya as a face washer. Besides benzoyl peroxide, acne therapy was more accurately cured by herbal

tea tree oil which was seen in some preparations and reduce pimples on the skin. Therefore, the acne was cured by using herbs in the development. The chemical components are highly present in most of the plants when compared to the other bacterial agent. Therefore, new techniques were implemented to reduce the pimples caused by bacterial agents. This study shows the therapy was safely protected and produce the desired result to reduce the acne. In this research, herbal face wash was provided and assessed their good effectiveness.

METHODOLOGY

Materials

The face wash was produced from the herbs by suppliers of crude herbal drugs, Nellore, India. SD FineChem., Mumbai, India, had supplied all the chemicals that are used in this study.

Extraction

In 4:1 ratio, the pulp along with cucumber seeds was extracted, then it was desiccated in the air and for every 5hrs, 70% of ethanol was removed. This removed product was evaporated in the rotary evaporator and then poured in the blend. To this add aloe vera juice of 30ml. One lemon was grasped and collect the juice and again add 30ml to it. Still collect the juice from 100gm papaya and add 30ml. Therefore mix all the juices which are poured into the blender for 2-3 minutes. After compressing the juices, those are taken under centrifugation before poured into the blender to separate substance.

Preparation of Cleanser

The components weight should be taken prior, according to Table 1. Take two beakers and add polymers into the beaker along with glycerin. Stir it vigorously with a magnetic stirrer and also other powdered components were inserted into the beaker. Therefore, a sufficient amount of distilled water was poured slowly to form a thickened group. Again it should be stirred throughout the night and produces a gel. The paste which was prepared with fruits is poured into each gel and stirred for about 120 minutes. At last, the stability of the sanitizer was checked and then filled up [3].

Evaluation of Cleanser

Physical Characters

The physical properties like odour, colour, stability, thickness, viscosity, uniformity are noted and reported. Digital pH meter was used to identify the pH value. Brook field viscometer used to get a better outcome.

Skin irritation

Table 1: Composition

S.No	INGREDIENTS	QUANTITY (100 ml)
1	Carbopol 940	550mg
2	Parabens (Methyl)	0.2mg
3	Parabens (Propyl)	0.2mg
4	Ethanol	35ml
5	SLS	15 mg
6	Glycerine	55 ml
7	Water	25 ml
8	Triethanolamine	1 ml
9	Flavour	q.s

To assess the irritating skin, four male and female volunteers were taken. For each preparation of two persons, note 2-3 cms on both the hands, one side of the hand were sterilized as standard and the other was the trail. The solution which was prepared should be applied for the hands 2-3 times per day for every three days. Therefore the applied area should be noticed if there is any change or side effect. After this, take 4female persons and 8 male persons who are healthy and then use the gel on their face for every two days daily with 3cms on their facial area. Therefore, notice the skin reactions.

Stress testing

A stability test executed the freezing and thaw cycling method. For two days, 4°C, 45 and later 25°C temperature were the conditions used to store the synthesized formulation was reported for any changes after two days. Along with this at the normal situation, changes in the pH can be recorded.

Anti-acne screening

Turbidity testing method

Take a conical flask which is sterilized, prepare 35ml nutrient broth. 5ml of the broth which is sterilized was noted and kept aside in the sterile area and took as a reference preparation. From the above preparation, the plate was cultured with microbial agents. Take four test tubes, add 5ml inoculated broth in each test tube. 1.5cms of cotton should undergo sterilization and placed on three tubes and note standard, Control, and carbopol gel. Then these three pieces of cotton have emerged in the distillate water. The distilled water was dissolved in clindamycin phosphate gel to get the result of 0.2mg/ml and then take 5ml of gel as well as the other 5ml of gel, then undergoes 10mins saturation. The gel which is dissolved and saturated were converted into three tubes. After transforming into the tubes, it undergoes incubation at 37°C for 24hours (Table 2

Table 2: Turbidity analysis

S.NO	SAMPLE	ABSORBANCE(A)			Mean ($\Sigma A/3$)
1	Control	1.682	1.675	1.483	1.653
2	Prepared gel	0.866	0.762	0.463	0.566
3	Standard	0.684	0.912	0.641	0.6852

). After completion of incubation by reference solution, its absorbancy was stated 600nm. Because of the instant errors occurred, reduce the difference in this process by conducting this experiment for four days. Later, figure out the values mainly. These values indicate the production of microorganisms [4].

Swabbing method

Different types of bacteria lead to acne on the skin. In other methods, entire native bacteria executed in pimples have shown that the prepared product acts opposite to all the organisms leading to acne. Three petri plates which are sterilized were collected and noted before and after carbopol to monitor the antibacterial agent. Already sterilized and formed nutrient agar medium was converted in these dishes and it freezes. Take three cotton swabs which are sterilized. The person who was affected with acne in their face, then their skin should be cleaned two times with distillate water and leave it to dry for some time. Later, take one piece of the sterilized cotton swab and massage the disrupt pimple for two-three times and this acne should be submerged with 1ml distillate water. Then this solution is injected in the agar medium plate where the point is noted before. Based on the conditions prescribed on the label, the person's face must be cleaned with the gel which was produced in this experiment. After cleaning with the gel, it must be cleaned with special commercialized gel and leave it for some time. Again repeat the same experiment and incubate at 36°C for 24 hours to produce microbial agents in the petri plates. Later, differentiate the petri dishes which are cultured with microorganisms.

RESULTS

Carbopol 940 was mixed with lemon juice, papaya, cucumber seeds, papaya pulp, aloe vera juice to form the fruit face wash gel with virtuous quality. The pale brown, yellowish colour was produced and was translucent. According to patients complaint, the odour and softness were obtained. Gel undergoes potency trail and therefore, there was no liquid separated from the gel and as well as there is no change has been noticed in colour and pH.

Approximately the pH gel was 6.97 and shows equality in the skin and acts opposite to microorganisms

effect. The gel consistency was 9.842 and this can stick on the skin and cleans the microorganisms eventually.

In irritating skin, the initial experiment was conducted to assess to provoke on the skin due to the gel. These formulations do not produce stinging, swelling or redness.

The turbidimetric method shows positive results in fighting the growth of bacteria. Therefore gels prevent the growth of the microbial organisms on the face too. Results show that the prepared gel was compared with the standard gel.

Based on the cotton swab method, the prepared gel was screened and showed potency to decrease the microorganism. The petri plates show the production of different colonies and are marked as before. So these various colonies are seen in the dishes. The plates show the decreased production, which includes carbopol gel is noted after eventually.

CONCLUSION

Pimples are most commonly seen in a young person. The face wash gel, which was produced from fruits shows benefit acts against pimple to cause microbial agents. The gels perform stability and doesn't show any irritants on the skin due to chemically synthesized drugs. To prevent pimples, polyherbal preparations were produced with lesser adverse effects and poisonous agents. In this present work, pimples therapy was conducted with fruits along with polyherbal preparations to maintain the disease and protected from the harmful agents.

CONFLICT OF INTEREST

Authors declared no conflict of interest.

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