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FORMULATION AND EVALUATION OF POLYHERBAL FACEWASH

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ABSTRACT
The purpose of the present research work was to formulate and evaluate facewash cream. Herbal creams offer several advantages over other creams. The majority of existing creams which have been prepared from drugs of synthetic origin, such as acyclovir, triamcinolone, calcipotriene, mometasone, extras gives fairness to face, but it has several side effects such as itching or several allergic reactions. Herbal creams do not have any of these side effects, without side effects it gives the fairness to skin. Method carried out to prepare herbal cream was very simple. Extract of crude drugs Aloe Vera, Honey, Orange peel, Turmeric, Green tea, Coconut oil, including Rose water was added at last just before the finished product was transferred to suitable container to act as perfume. The above prepared herbal cream was evaluated. The physical parameters such as pH, homogeneity by visual and by touch, appearance (color), rubout (spread ability, wetness) were determined. Further studies are needed to investigate this formulation for its performance.

KEYWORDS: Ayurveda, Herbal plant, Polyherbal, Face wash.

INTRODUCTION
Plants are a fundamental part of life on the Earth. Life on planet Earth cannot be imagined without plants as they are an essential component of the ecosystem and play an important role in the lives of animals as well as in humans by maintaining its balance.[1] Plants are considered critical assets because in the many ways they support life on Earth. Many plants are used for medicinal purposes. They are used for cleansing, exfoliating, protecting and replenishing the skin.[2] Cosmetics also increase the strength and maintain texture of skin and face.[3] Skin requires protection and prevention from microorganisms and skin diseases, as it is the most exposed part of our body to the pathogens.[4] The plants used in this formulation have been reported to have anti-acne, anti-oxidant, moisturizing properties and effects against hyper pigmentation.[5] Topical applications and cosmetics are one of the most demanding form of ayurvedic medicine.[6] To keep the skin healthy, clear, glossy and to avoid various changes such as dryness, roughness, pimples, acne, tanning etc. use of herbal remedies is preferred.[7] Gel formulations provides good effects and are more stable as compared to cream and ointment.[6] A facewash is a gentle cleanser that performs the vital job of keeping the skin clean, germ free, smooth and moisturize without any harshness to the skin.[8] It was a good attempt to establish the polyherbal facewash containing extracts of aloevera as an antibacterial agent,[7] honey as a moisturizer,[9] rose water as antiallergic,[9] orange peel as antioxidant and to maintain natural balance of skin oil,[10] green tea as antiacne and antiaging,[11] turmeric as a glowing agent and coconut milk as a preservative.

MATERIALS AND METHODS
Table 1: List of materials.

List of ingredients	Botanical names	Parts used	Property
Aloevera	Aloe barbadensis	pulp	Foaming and Gelling agent
Honey	_	_	Moisturizer
Rose water	_	Rose petals	Perfume, Solvent and Antiallergic
Orange peel	Citrus sinensis	fruit skin (outer cover)	Antioxidant
Green tea	Camellia sinensis	Leaves	Antiacne
Turmeric	Curcuma longa	roots	Glowing agent
water	_	_	Solvent
Coconut oil	Cocos nucifera	fruit	Preservative

Neem	Azadirachta indica	leaves	Antibacterial, Antifungal, Anti-inflammatory and Antiseptic

Role of ingredients

Aloe vera: It has anti-inflammatory effects which helps to relieve swelling, pain, injuries and it helps in healing wounds and injuries. Aloevera has the antioxidant property that can repair UV damage and slows down the skin's ageing process. Aloevera enhances the skin's flexibility and makes it more supple rather than stiff and leathery.[12]

Honey: The sugar composition of honey provides hygroscopic effects that fixes water molecules. This provides an occlusive film which maintains skin hydration. This property of honey helps to moisturize skin. Honey can be topically applied due to its antimicrobial and antiseptic properties.[13]

Rose water: The rose water consists of the major phytoconstituents which are polyphenolic compounds tannins, flavonoids, triterpenoids, saponins which are mainly responsible for the antioxidant and anti-ageing properties. It can help reduce the appearance of temporary redness and in natural hydration. It helps to prevent wrinkles and to remove impurities.[14]

Orange peel: Orange peels are a rich source of vitamin-C, calcium and provitamin-A. It contains strong free radical antioxidant property and photoprotective effects. Prevents oxidative stress in skin cells and works as a skin lightening agent.[15]

Green tea: Green tea contains polyphenols which helps to prevent acne and gives even skin tone. On applying to the skin, green tea also reduces whiteheads, blackheads and keeps the skin calm and clear.[16]

Turmeric: The anti-inflammatory and antioxidants present in turmeric helps in reviving skin by bringing out its natural glow. As it a natural antiseptic, it is used as an excellent tan removal.[15]

Coconut oil: Coconut oil contains sulfites, which are used as preservatives in cosmetics.

Neem: Neem leaves are highly beneficial for oily and acne prone skin.

Methods

Collection of plant materials

Plant materials were collected from the local areas (Nursery) of Pune district. The collected materials were cleaned and flesh was removed for further process of extraction.

Preparation of Extracts/Powders[17]

a) Aloe vera extracts

Aloe Vera Gel was extracted from aloe vera leaves by cutting off the green skin layer with a knife. Store Aloe Vera Gel in a jar with a tight-fitting lid in the fridge, where it can be kept for up to a week.

b) Rose water extract

Rinse some roses under cool water and then remove all of their petals then put the petals in a pot and cover them with water. Once the petals are covered with water put a lid on the pot and heat it over low heat for 20 minutes. Then finally cool it.

c) Green tea powder

leaves of green tea work in hot air oven for drawing purpose at 45°C and then grinded into small pieces by using grinder.

d) Coconut oil

Skin of coconut fruit was scraped off. The white part of coconut fruit was collected and cut into small pieces. These pieces were blended using Blender and the coconut milk was prepared and kept for a day. Two separate layers were formed. The upper whitish layer was collected and heated on low flame. After some time, coconut milk began to turn crumbly, formed some lumps and became brownish. It was stirred continuously. After a while, the oil was separated from the solids. Then it was strained into a container.

e) Orange peel powder

Fruit was washed and dried. The orange layer of the skin was peeled using knife and cut into thin slices and sun dried for 3 to 4 days completely the dried peels were poured into the food processor and the powder was obtained.

f) Turmeric powder

Thoroughly wash turmeric root. Thinly slice turmeric. Dry at 135 for 5-7 hours, or until the turmeric root is crispy and completely dried. Place dried turmeric in blender and process until it becomes a fine powder.

g) Neem powder

Fresh neem leaves were taken and sundried for 2 days until all the moisture from leaves got dried out becoming dry and crispy. They were put into blender and grinded into fine powder.

Filtration

Filtration of the extracts prepared was done by using simple filter using muslin cloth and funnel for two times. Now separately the contents of extracts were filtered out using simple filtration method and the filtrates were collected separately in the vessels.

Evaporation

Water bath was used for the purpose of evaporation. the filtrate obtained through filtration were allowed to

evaporate in water bath at 60°C temperature until the desired concentration of the extract was obtained.

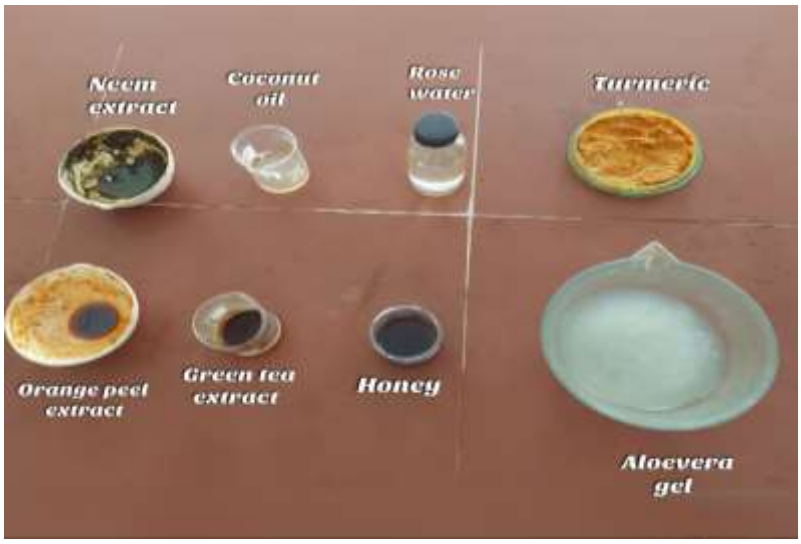

Fig. 1: Preparation of extract.

Preparation of gel base

Dried powders of orange peel and green tea were added to rose water, honey and water by moderate shaking of conical flask. A little quantity of water along with the preservative (coconut oil) was added to this and left overnight.

Development of formulation

Table 2: Development of formulation.

Sr. no.	Ingredients	Quantity
1.	Aloe Vera	6 ml
2.	Honey	2.5 ml
3.	Rose water	Qs
4.	Orange peel	1.5 ml
5.	Turmeric	3.5 ml
6.	Green tea	2 ml
7.	Coconut oil	1.5 ml

Characterization and Evaluation test of face wash[18-20]

Determination organoleptic properties

The prepared face wash was evaluated for various parameters like Colour: The Colour of the face wash was checked visually, Odour: The formulation was evaluated for its odour by smelling it, Consistency: It was determined visually and Appearance: It was determined visually.

pH: According to the results, the P^H of all formulation were found to be nearer to skin P^H so it can be safely used on the skin

Spreadability: Spread ability of face wash measures the extent of area to which the gel readily spreads on application to the skin.

Washability: Washability test was carried out by applying a small amount of cream on the hand and then washing it with tap water. Formulation was easily washable.

Irritancy test: Mark the area (1 cm2) on the left-hand dorsal surface. Then the cream was applied to that area and the time was noted. Then it is checked for irritancy, erythema, and edema if any for an interval up to 24 hrs.

RESULTS AND DISCUSSION

Formulated and evaluation of polyherbal facewash showed positive result in colour, odour, and consistency test It was determined visually. The pH of the cream was found to be in range of 5.6 to 6.8 which is good for skin ph. Formulation of cream was shown pH nearer to skin required i.e. pH-5.8.The viscosity of cream was in the range of 500-1000 cps which indicates that the cream is easily spreadable by small amounts of shear, show good spreadable property than other formulations. Formulations produce uniform distribution of extracts in cream. This was confirmed by visual appearance and by touch. Spread ability of face wash passes the test; gel readily spreads on application to the skin. The cream applied on skin was easily removed by washing with tap water. In Irritancy test formulation shows no redness, edema, inflammation and irritation during irritancy studies. These formulations are safe to use for skin. From above results it is concluded that on combining the above extracts in different components and in different ratio we get multipurpose effect such as whitening, ant wrinkle, antiaging and sunscreen effect on skin. As we know, it is not possible to increase the extent of efficiency of medicinal and cosmetic property of single plant extract, but by combining different natural components it is possible to increase the efficacy of extracts. In this regard, we mixed Aloe Vera, Honey, Rose water Orange peel, Turmeric, Green tea, Coconut oil to improve as

well synergize the cosmetic properties of prepared products compared to individual extracts. Further research will be carried out to check scientifically the synergistic action of selected formulation.

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