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## FORMULATION AND EVALUATION OF POLYHERBAL FACIAL SCRUB

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### ABSTRACT

Natural beauty is blessing and cosmetics help in presenting and increasing the beauty and personality aspects of human being. The aim of present study is to formulate and evaluate Polyherbal facial scrub which can be best alternative against chemical products. This herbal cosmetic is formulated using different cosmetic ingredients from daily use like lemon peel, orange peel, tomato, cucumber, neem bark, sandalwood powder, rice flour, carrot powder, chickpea flour, aloe vera etc used to cure various skin ailments. Apart from beautification this cosmetic product acts as astringent, antioxidant, anti-inflammatory, moisturizer, antitanning, acne removing agent. The

herbal cosmetic so manufactured can be used commonly for daily purpose. Herbal cosmetics are growing rapidly as most women prefer natural products rather than chemical products for their personal care.

**KEYWORDS:-** Herbal cosmetics, astringent, scrub, beautifying agent, moisturizer.

### INTRODUCTION

Some are born beautiful, but other is made to look beautiful. In present situation, the uses of herbal products and cosmetics have increased significantly.<sup>[1]</sup> Demands of herbal products as well as cosmetics are increasing day by day to the immense health of synthetic ingredients that again contribute to environmental degradation. The concept of beauty and cosmetics dates back to the ancient mankind and civilization.<sup>[2]</sup> The herbal cosmetics have improved much popularity among the population of world. The name itself suggest that herbal cosmetics are natural and free from all the harmful synthetic chemicals which otherwise may prove too toxic to the skin. Herbal products contain ingredients as bases were one or more

herbal ingredients are included. The health, habits routine job, climate condition and maintenance were responsible individual's skin.<sup>[3]</sup> Flower, leaf, fruit, root, bark, inner part of stem, wood, beans, rhizomes, bulb, seed or even whole plants are used to produce bioactive ingredients.<sup>[4]</sup>

### Material used

#### 1. Lemon peel powder<sup>[5,6]</sup>



**Fig. no. 1: Lemon peel powder.**

- **Synonym-** Cortex limunis
- **Biological source-** Lemon peel is the outer part of the pericarp of the ripe or nearly ripe fruits of *Citrus limon* belonging to family *Rutaceae*. It contains not less than 2-5% of volatile oil.
- **Description**  
Colour- yellow  
Odour- fresh, clean, biting  
Taste - sour
- **Chief chemical constituents-** Camphene, bpinene, Sabinene etc.
- **Uses-** antimicrobial, antifungal, anti-inflammatory, anti-cancer, depurative, Anticancer, antioxidant, Antiparasitic, treat scurvy, skin astringents.

## 2. Powder of neem bark<sup>[7,8]</sup>



**Fig. no. 2: Bark of neem powder.**

- **Synonym-** Melia Azadirachta
- **Biological source-** It consists of leaves and other aerial parts of Azadirachta indica belonging to family *Meliaceae*.
- **Description**  
Colour - Leaves-green dark to greenish yellow in colour  
Flowers- White scented  
Fruits- Smooth greenish yellow in colour  
Bark- Rough, greyish to brownish in colour  
Odour- Garlic/sulfur smell  
Taste- Bitter
- **Chief chemical constituents:** Isomeldenin, Nimbim, Nimbinene, 6desacetylnimbinene, Neembark and leaves contain tannins and oil
- **Uses-** To treat skin diseases, antimicrobial agent, antioxidant, neuroprotective, treat head lice.

## 3. Orange peel powder<sup>[9,10,11]</sup>



**Fig. no. 3: Orange peel powder.**

- **Synonym-** Oleum Auranti
- **Biological source-** It is the volatile oil obtained from the fresh orange peels of citrus aurantium and citrus sinenses belonging from family Rutaceae.
- **Description**  
Colour- orange  
Odour- fresh  
Taste- sweet and bitter
- **Chief chemical constituents-** Linalool, octanol and decanol
- **Uses-** It helps to dry out acne, antimicrobial, it has instant glow property, prevent acne, blemishes, wrinkles and aging, grind orange peel and use as a body scrub in daily for healthy looking glow.

#### 4. Carrot powder



**Fig. no. 4: Carrot powder.**

- **Synonym-** Gajor
- **Biological source-** The carrot *Daucus carota* is a root vegetable, usually orange in colour through purple, red, white and yellow varieties exists belonging to family Apiaceae.
- **Description-**  
Colour- orange in colour  
Odour – spring  
Taste- bitter or soapy
- **Chief chemical constituents-** It contains carotens, especially alpha and beta carotenes, vit. A and C and dietary fiber. It is rich in calcium and potassium red carrots contains lycopene.

- **Uses-** Its juice good tonic for eyes, skin etc, anti-aging, revitalizing and rejuvenating agent.

## 5. Rice powder<sup>[13]</sup>



**Fig. no. 5: Rice powder.**

- **Synonym-** Orzya sativa
- **Biological source-** It is the seed of the grass species orzya sativa or orzya glaberrima.
- **Description**  
Colour- golden yellow colour  
Odour- characteristic  
Taste- bland
- **Chief chemical constituents-** It is white, long grained rice is composed of 68% water, 28% carbohydrates, 3% protein and Negligible fat.
- **Uses-** protecting, calming & inflammatory agent, oil- retaining properties.

## 6. Sandalwood powder<sup>[14,15]</sup>



**Fig. no. 6: Sandalwood powder.**

- **Synonym-** Lignum Santali
- **Biological source** – Dried heart wood of santalum album belonging to family *Santalaceae*.
- **Description**  
Colour- Red  
Odour- sweet balsam woody guaiawood peppery cubeb.
- **Chief chemical constituents-** alpha santalol and beta santalol and sentenone are main constituents of the sandalwood oil. It has been found to enhance the activity of glutathione s-transferase, increasing the level of acid soluble sulfhydryl group.
- **Uses-** used as a fragrance in incense, cosmetics, perfumes and soaps, anti-carcinogenic, antiangiogenic, antioxidant and anti-inflammatory.

## 7. Chickpea flour<sup>[16,17]</sup>



**Fig. no. 7: Chickpea flour.**

- **Synonym-** Cicer album hort
- **Biological source-** Chickpeas serve as a energy and protein source as animal feed belonging to family *Fabaceae*.
- **Description**  
Colour-Green, black, brown and red.  
Odour- Farts
- **Chief chemical constituents-** It is good source of vitamins such as riboflavin, Niacin, thiamin etc. Calcium, magnesium, potassium.
- **Uses-** Remove tan, helps to treat acne, fights infections that cause acne, o decrease tanning of the skin, also reduces the oiliness of skin, thus proving as a good anti-pimple agent. It lightens the skin tone, therefore used as an instant fairness agent, remove dark spots caused by the sun and will leave your skin feeling brighter.



## 8. Aloe vera<sup>[18]</sup>



**Fig. no. 8: Aloe vera.**

- **Synonym-** Aloe, Ghritkumari
- **Biological source-** Dried juice collected by incision from the bases of the leaves of various species of aloe belonging to family *Lilaceae*.
- **Description**  
Colour- Dark green  
Odour-strinking and oozing  
Taste- Bitter
- **Chief chemical constituents-** It contains amino acids, lipids, sterols, tannis and enzymes.
- **Uses-** Moisturizing the skin, reducing stretch marks, helps with sunburns, moist skin, treating pimples, Skin Aging, Sun-burns.

## 9. Tommato powder<sup>[19]</sup>



**Fig. no. 9: Tommato powder.**



- **Synonym-** Love apple
- **Biological source-** It is the edible, often red, berry of the plant *Solanum lycopersicum*.
- **Description-**

Colour- Red

Odour- Sweet fragrance

Taste- sweet and sour flavoured






- **Chief chemical constituents-** Some anti-oxidant compounds such as vit.c, polyphenols, Flavonoids, anthocyanins etc.
- **Uses-** Used to treat acne, revive dull skin, fight cellular damage, used as astringents, antioxidant.





#### 10. Cucumber powder<sup>[20]</sup>



**Fig. no. 10: Cucumber powder.**

- **Synonym-** *Cucumis sativus*
- **Biological source-** It is widely cultivated plant in the ground family *Cucurbitaceae*, which include squash and in the same genus as the muskmelon.
- **Description**  
Colour- white and green  
Odour-sweet green  
Taste- mild melon aroma
- **Chief chemical constituents-** Carbohydrates, fats, sugars, proteins, dietary fibers, vitamins, metal ions.
- **Uses-** It is cooling and beautifying agents, reverses skin tanning, helps soothe sunburn, treats open pores, reduces dark circles, Antioxidant Activity.

Sr. no.	Crude drug	Diagram	Uses
1	Lemon		antimicrobial, antifungal, anti-inflammatory, anti-cancer, depurative, Antiacne, antioxidant, Antiparasitic, treat scurvy, skin astringents.
2	Neem bark		To treat skin diseases, antimicrobial agent, antioxidant, neuroprotective, treat head lice.
3	Orange peel powder		It helps to dry out acne, antimicrobial, it has instant glow property, prevent acne, blemishes, wrinkles and aging, grind orange peel and use as a body scrub in daily for healthy looking glow.
	Carrot		- Its juice good tonic for eyes, skin etc, anti-aging, revitalizing and rejuvenating agent.
5	Sandalwood powder		used as a fragrance in incense, cosmetics, perfumes and soaps, anti-carcinogenic, antiangiogenic, antioxidant and anti-inflammatory.

6	Chickpea powder		Remove tan, helps to treat acne, fights infections that cause acne, o decrease tanning of the skin, also reduces the oiliness of skin, thus proving as a good anti-pimple agent. It lightens the skin tone, therefore used as an instant fairness agent, remove dark spots caused by the sun and will leave your skin feeling brighter.
7	Alovera		- It contains amino acids, lipids, sterols, tannis and enzymes. • <b>Uses-</b> Moisturizing the skin, reducing stretch marks, helps with sunburns, moist skin , treating pimples, Skin Aging, Sun-burns.
8	Rice powder		Good anti-inflammatory agent Prevents skin from suntan
9	Tomato		Used to treat acne, revive dull skin, fight cellular damage, used as astringents, antioxidant.

10	Cucumber powder		Cooling and beautifying agents, reverses skin tanning, helps soothe sunburn, treats open pores, reduces dark circles, Antioxidant Activity.
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### Methods of collection of crud drugs<sup>[21]</sup>

#### 1. Collection of Orange peel, Lemon peel and Neem bark

Fresh orange and Lemon and Neem bark were collected from college campus. The bark of orange, Lemon and Neem were washed well using tap water. The peel is separated, cutted into small pieces then it was dried in shade for a period of 3-4 days. Neem bark also separated from Neem tree, washed properly and it was also dried in the shade for a period of 4-5 days. The dried samples were grinded properly to obtain the powdered form then pass it through sieve no. 60.

#### 2. Collection of cucumber powder, Carrot powder, and Tomato powder

Fresh Cucumber, Carrot and Tomato were collected. They were washed properly using tap water, then they were cutted into small pieces and it was dried in the shade for a period of 4-5 days. The dried samples were then grinded properly to obtain the powdered form and then it was passed through sieve no. 60.

#### 3. Collection of Rice powder and Gram flour powder

Take any type of available Rice from local market, grinded properly to obtain the powdered form then pass it through sieve no. 60.

Take the husk of Gram flour from local market, grinded properly to obtain the powdered form then pass it through sieve no. 60.

#### 4. Collection of sandal wood powder

Take the Sandal wood powder from local market, grinded properly to obtain the powdered form then pass it through sieve no. 60.

## 5. Collection of aloe vera gel

Fresh Aloe vera were collected from college botany garden and gel was removed from it and stored in well closed bottle.

### Formulation table of cleansing cream

Sr No.	Name of crude drug	Quantity (%)	Uses
1	Lemon Peel Powder	1%	Antiacne, antioxidants
2	Neem Bark Powder	0.5 %	antiseptic
3	Orange Peel Powder	1%	cleanser, astringent
4	Cucumber Powder	0.5%	skin toner, astringents
5	Carrot Powder	1%	tan removal agent
6	Tomato Powder	1%	anti-aging
7	Rice Powder	2%	Skin whitening agent
8	Gram flour	1.5%	Remove dark spot
9	Aloe vera	4%	sun protection
10	Sandalwood Powder	1.5%	smoothing, cooling
11	Carbopol	2%	Gelling agent
12	propyl paraben	0.1%	Preservative
13	Triethanolamine	1%	Neutralizer
14	Propylene Glycol	1.5%	Moisturizer
15	Sodium Lauryl Sulfate	2%	Foaming agent
16	Distilled water	q.s.	Vehicle

### Method of preparation<sup>[22,23]</sup>

1. Soak Carbopol for 24 hours to make the base of formulation.
2. Adjust the PH by using Triethanolamine as a neutralizer.
3. Add measured quantity of powdered herbs in it.
4. Add propyl paraben as a preservative.
5. Make up the volume and store in the well closed container.

### Evaluation<sup>[23]</sup>

Following tests were performed to evaluate the quality of prepared herbal formulation.

1. **Colour:** - The colour of facial cleansing cream was checked visually.
2. **Odour:-** Odour of the prepared formulation was evaluated by smelling it.
3. **Consistency:-** Was determined manually.
4. **PH:** - The PH of 1% solution of formulation was measured by using a calibrated digital PH meter at constant temperature.
5. **Washability:** - Formulation was applied on the skin and easily removed by washing with water was checked manually.

6. **Spreadability:-** It was checked manually by applying the cream on the skin or face with hand and observed.
7. **Rheological study:-** The viscosity of developed formulation was determined by using Brookfield viscometer .
8. **Sensitivity:-** The preparation was applied on human hand & face and observed for any side effects.

#### **Result of tests**

1. **Colour:** - Brownish
2. **Odour:-** Pleasant.
3. **Consistency:-** Good
4. **PH:** - PH of the formulation was found to be 4.9
5. **Washability:-** Formulation was easily removed on washing with water.
6. **Rheological study:** - Good
7. **Sensitivity:-** No irritation or itching was observed when applied on human skin.

#### **RESULT AND DISCUSSION**

Polyherbal Facial Scrub was successfully formulated and evaluated for Organoleptic, Physicochemical & General powder as per above procedure.

The formulation so prepared is very effective and having advantageous over chemical products. Now a day's peoples prefer herbal formulations over chemical products. This formulation contains natural ingredients which are easily available. This preparation is used for various purposes as many ingredients are used and they have various properties like Antiacne, antioxidants, antiseptic, cleanser, astringent, skin toner, astringents, tan removal agent, anti-aging , Skin whitening agent, Remove dark spot, sun protection, smoothing, cooling etc.

#### **CONCLUSION**

The formulation prepared is very effective and without side effects. Various evaluation parameters were studied and all parameters are found within range. Formulation was found to be satisfied for application on the skin to make skin healthy and glowing without side effects.

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