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Research Article

Formulation and evaluation of exfoliating facial scrub containing avocado and almond extract

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Abstract



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Major objective of present study to be prepared a herbo-mineral facial scrub. Majorly facial skin comes in contact with dirt, pollution, dust particles having large number of dead cells. In order to remove dead cells and make skin healthy, clean, nourished some facial preparation are required. Prepared scrub contains various natural ingredients which are safer for use having fewer side effects. Also they possess antioxidant, anti-aging, humectant properties¹. This exfoliating facial scrub is prepared by using simple mixing method using various ingredients such as avocado extract, coffee beans, almond oil, carbapol 934, hyaluronic acid, preservatives and perfuming agents also added to this preparation with homogenous mixing. Evaluation of this exfoliating facial scrub includes physical appearance, texture, odour, colour, viscosity, Spreadability and washability. Prepared formulation can be used effectively as it shows good exfoliating property, good scrubbing property. It can be used to make exfoliate, healthy, glowing skin.

Keywords: Exfoliating facial scrub, less side effect, good scrubbing property, glowing skin.

INTRODUCTION:

Skin is the largest organ of the body. It serves major protective organ for other body parts¹. Skin protects us from microbes and the elements helps regulates body temperature and permits the sensation of touch, heat and cold. Skin function as protective wrapper keeping everything beneath it and keep safe from daily threats such as harsh effect of sun, wind and pollution¹. For oily skin it is essential to get a scrub that exfoliate deeply to prevent the pores from clogging and also to balance skins oil production². Avocado is widely regarded as an important fruit for its nutritional value. it has antioxidant properties, it contains three most important vitamins. it's fat consist monounsaturated oleic acid which is found to be reduced harmful low density lipoprotein cholesterol³. Avocado provides anti-ageing benefits, fights acne, hydrates skin, strengthens skins natural barrier. Avocados are rich source of omega 3 and omega 6 fatty acid, this two ingredients are extremely essential in forming the skin's natural lipid layer. Almond oil rich source of macronutrients and micronutrients, and it is extracted for cosmetic industry. it is used against allergenicity⁴. Haluronic acid helps with soft tissue growth, prompts your body to make more collagen and elastin keeps your skin moisturized.

MATERIAL AND METHODS:

Coffee beans are purchased from local shop and then it is slightly crushed in mortal pestle neem and tulsi extract was

prepared using soxhlet apparatus for 72 hours. neem and tulsi extract kept with water separately. Extract was dried and stored in desiccator for further use. Coffee beans are crushed and then dissolved in alcohol to avoid swallowing in water.

Table 1: Formula of scrub

Ingredients	Uses	Quantity
Almond Oil	Stimulate the production of new skin cells and smooth fine lines	5%
Glycerine	Emollients	2.5 – 5%
Kaolin	Adsorbent	2.5 %
Avocado extract	Calm itchy skin. Replenish dry skin. Hydrate and moisturize skin.	5 – 15%
Coffee beans	Scrubbing agent	2.5%
Carbopol 934	Thickening agent Gelling agent	1%
Methyl paraben	Preservative	0.05%
Propyl paraben	Preservative	0.025%
Triethanolamine	Neutralizer	Q.S.
Hyaluronic acid	Moisturizing	1-2%
Rose essence	Perfuming agent	Q.S.
Demineralized water	Vehicle	Q.S.
Neem Extract	Antiseptic	1%
Tulasi Extract	Anti-infective	1%

Method of preparation

Preparation of extracts:

A. Preparation of neem extract:

Neem extract was prepared by using soxhlet apparatus, neem leaves kept with water for 72 hours. Extraction was dried and stored in desiccator for further use¹⁰.



Fig.No.1: Neem extract

B. Preparation of Tulsi extract:

Tulsi extract was prepared by using soxhlet apparatus, tulsi leaves kept with water for 72 hours. extraction was dried and stored in desiccator for further use¹¹.



Fig.No.2: Tulsi extract

C. Preparation of aloe-vera extract:

Fresh aloe-vera leaves collected and remove the gel manually. gel was grinded into mixture to get a homogeneous form.



Fig. No.3: Aloe-vera extract

Extraction of Avocado oil:

The oil of avocado was extracted using pulp drying method where the ripe avocados were peeled with a peeler, the seeds were removed and then the pulp was scooped out into a manual grinder which turned it into a paste. The paste was then transferred into a beaker and then placed on the water bath at 75 -80 degree Celsius. It was left on the water bath for 3 days to evaporate water content. After the water had evaporated. The avocado paste was pressed through a muslin cloth and the resultant oil was centrifuged and collected⁵.



Fig.No.4: Avocado oil extract

Preparation of Carbapol Base:

Required quantity of carbapol 934 taken in a separate beaker. Add rest of ingredient one by one in to it with continuous and homogenous stirring.

Step 1: Mixed almond oil, camphor, propyl paraben, glycerin together in a separate beaker.

Step 2: Mixed crushed coffee seeds, kaolin, neem extract, tulsi extract, aloevera gel and methyl paraben in another container.

Step 3: Add carbapol in little quantity of alcohol, add aloevera gel in the mixture and triturate well in pestle mortar.

Add the content of step 1 ,2 into 3 with gentle continuous stirring in a mortal pestle. Add demineralized water gradually till a semisoilid consistency was not formed.

Evaluation parameters of facial scrub:

Physical evaluation

The developed exfoliant facial scrub was inspected for its homogeneity, color, syneresis, and presence of lumps by visual inspection after it has been set in the container. The color was found to be pale white with characteristic odor. The scrub showed good homogeneity with the absence of lumps and syneresis^{6,7,8,9}.

pH

The pH of the scrub was determined using digital pH meter. Considered to avoid the risk of irritation on application to the skin.

Washability:

This test was performed directly on skin, preparation applied on skin and wash with normal water, after washing clean and clear skin observed.

Viscosity:

The viscosity of the different scrub formulae was determined at 25°C using Brook field viscometer DV2T model. The scrub sample (5 g) was placed in the sample holder of the viscometer and allowed to settle for 5 min, and the viscosity measured.

Extrudability

It is usual empirical test to measure the force required to extrude the material from tube. More quantity extruded better the extrudability. To determine extrudability a closed collapsible tube containing formulation was pressed firmly at the crimped end. When the cap was removed, formulation extruded until the pressure dissipated. The average extrusion pressure in gm was reported.

Spreadability:

The spreadability is very much important as shows the behavior of scrub that comes out from the tube. It is used to identify the extent of spreadability by the scrub on the skin.

Skin Irritation: Small quantity of the preparation was applied on the dorsal part of hand and kept for few minutes and found to be non-irritant, no redness and edema or any other adverse effects.

Organoleptic properties:

A] Colour-The colour of formulation was observed as pale white, it was checked manually.

B] Odour- The smell of formulation was checked by applying preparation on hand and feels the fragrance of perfume.

C] Consistency-The consistency of the formulation and particles were used to check the texture and homogeneity of the preparation on the skin such as stiffness, greasiness and preparation found semi-solid in nature.

D] Homogeneity and texture-It was tested by pressing a small quantity of the formulated scrub between the thumb and index figure.

RESULT AND DISCUSSION:

The formulated Exfoliating Facial Scrub was evaluated at different parameters.

Table 2: Result and discussion

Sr.no	Parameters	Observations
1	Washability	Easily washable
2	pH	7.5
3	Viscosity	6960-7100cps at 10rpm
4	Extrudability	Easily extruded
5	Spredability	Easily spread
6	Skin irritation	No irritant
7	Colour	Pale yellow
8	Odour	Characteristic as rose
9	Consistency	Good
10	Homogeneity and texture	Good

All the organoleptic properties were checked visually such as colour, odour, consistency, homogeneity and texture. As a result, colour observed as pale yellow, no bad smell occurred from formulation. The consistency of the formulation found suitable as required to apply on skin. Particles were used to check for the texture and homogeneity of preparation on skin found good and satisfactorily as the preparation show greasiness properties on skin. Washability properties found good, as it is easy removed by washing with normal water, Ph of the formulation checked and found 7.5 means suitable for skin extrudability test performed with the help of empty collapsible tube filled with scrub. Spreadability quality tested and found that preparation having good consistency and easily spreadable. No irritation, redness, edema and any dermatological effects observed on skin.

CONCLUSION:

From the above result it is concluded that new formulation Exfoliating scrub can be safe to use and the coffee beans used as as scrubbing /cleansing agent showing good effects and as mostly ingredients are natural ingredients so chances for side

effects are less. It can be used for any type of skin that is normal, oily and dry. It gives best result and make the skin glowing, exfoliating and healthy.

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AUTHOR'S CONTRIBUTIONS

All the authors have contributed equally for the outcome of the present work.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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