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FORMULATION AND EVALUATION OF HERBAL FACE CREAM

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Abstract:

The present research focuses on the formulation and evaluation of a herbal face cream incorporating natural ingredients with proven dermatological benefits. The cream is composed of Aloe vera, Amla, cucumber peel extract, beeswax, white soft paraffin, and a blend of preservatives and humectants including methyl paraben, glycerin, propylene glycol, and sodium benzoate. These components were selected for their synergistic effects in enhancing skin health through moisturization, anti-inflammatory action, antioxidant protection, and antimicrobial activity. The formulation was prepared using standard homogenization techniques, followed by a comprehensive evaluation based on physicochemical and dermatological parameters. Key tests conducted included pH determination, spreadability, viscosity, washability, consistency, and a non-irritancy assessment on human volunteers. The optimized batch demonstrated favorable characteristics, including a pH of 6.7, excellent spreadability (7.4 g.cm/cm), appropriate viscosity (39015 cps), and non-irritant behavior, confirming its safety and effectiveness for topical application. Organoleptic attributes such as color, odor, and texture further enhanced consumer acceptability. The outcomes affirm the potential of herbal ingredients as efficacious alternatives to synthetic additives in cosmetic formulations. This study contributes to the growing field of herbal dermatology and supports the development of eco-friendly, biocompatible skincare products with minimal adverse effects.

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INTRODUCTION: -

The Demand of herbal cosmetics due to the availability of new ingredients the financial rewards for developing successful products and maintained of quality standard. Cosmetics are the products applying on the body. Face cream are used as cosmetic for softening and cleansing action. The Ayurvedic system of medicine was one of the most important systems that uses herbal plant and extract of the treatment of management of various Diseases state [1] Aloe vera Synonyms-Aloe Barbadensis Belong To Family- Liliaceae, which having 300 specie, Aloe vera is cactus like plant that grow readily in hot, dry climates, and Aloe vera cultivated in very large Quantities. Cosmetics and some medicinal products are made up from the mucilaginous tissue in the centre of aloe vera leaf and called Aloe vera gel. Aloe vera gel contains no Antraquinone. Which are Responsible for the strong laxative affects of aloes. However, total leaf extract may contain Antraquinone. [2] Aloe vera contains 75 potentially active constituents like Vitamines, Enzymes, Minerals, Sugars, Saponis, Amino acids.[3]Amla,Synonyms-Emblica Officinalis. Euphorbiaceae. Which also known as Indian gooseberry. It contains Vitamin C considered important to slow the ageing radicals. Vitamins C is a Scavenger of free radicals which break them down. And also contain Amino acid like glutamic acid, proline, And Aspartic acids etc. Protein, Minerals.[4,5] Amla having show Antioxidant,Anti-cancer,Antibacterial Activity.[6.7.8.9] Cucumber (Cucumis sativus L.) belongs to Cucurbitaceae family such as melon, watermelon, pumpkin and zucchini. It is widely consumed fresh in salads or fermented (pickles) or as a cooked vegetable. They are widely used for various skin problems including swelling under the eyes and sunburn. It is believed that they promote refreshing, cooling, healing, soothing, emollient and anti-itching effect to irritated skin.

- **COSMETOLOGICAL IMPORTANCE OF CUCUMBER PEELS**

Do not discard cucumber peel it has many health benefits. The benefits include its beneficial effects in eye disorders, vitamin A& C deficiency, constipation and bones and muscles disorder. Cucumber peels are rich in fiber and contain minerals like magnesium, potassium, and silica. The silica is an essential component to keep your muscles, bones, and tendons healthy. It also hydrates our skin, improves complexion and vision.[3]

Beneficial for the skin:

Cucumber peels helps in revitalizing the skin from within. Regular application of cucumber- based face packs or grated cucumber appears to be effective in reducing the signs of skin aging. It is also good for your dark circles, open pores, blemishes, etc[4]

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Fig No.1 Cucumber Peels

Reverses Skin Tanning

Cucumber has a mild bleaching property that can help you get rid of skin tan. Just grate the cucumber and apply the juice on your face and you're all set to face harsh UV rays!

Cools You Off

Due to its cooling qualities, cucumber has a tendency to calm and refresh you in this pricking heat. Just put water and some peels in an infuser and you're all set to beat the heat.

- **IMPORTANCE OF HERBAL FACE CREAM**

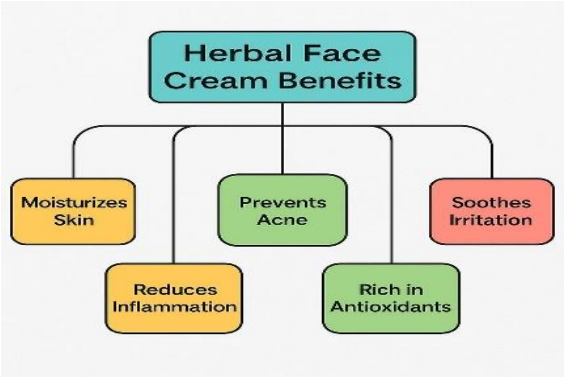


Fig 2.Benefits of herbal face cream

1. This herbal face cream is lightweight and it eliminates pimples, black patches and keep our skin soft.
2. This herbal cream is extremely effective to the face skin for keeping dryness away and also makes our face skin wonderful.
3. This herbal face Cream fights with puffiness,

pigmentation, wrinkles, aging lines and further gives deep moisture to our skin.

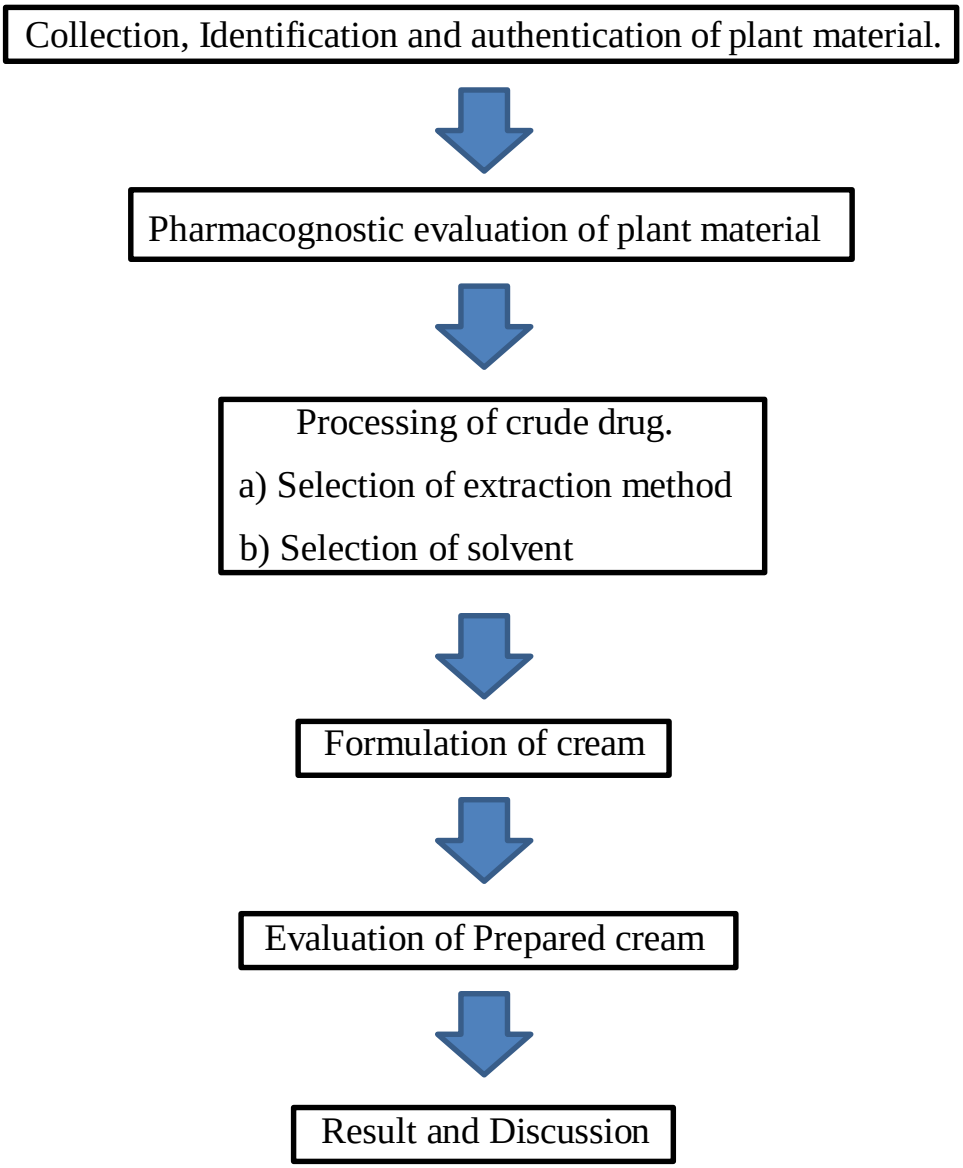
4. This herbal face cream product not only makes our skin gentle but also shines in additional times.[5]

This herbal cream reduces pigmentation and also gives glows to our face skin. there are numerous herbal face cream, for example, herbal night cream, herbal potato cream, herbal haldi chandan cream, herbal gold cream, herbal foot care cream, herbal d-tan cream, herbal vitamin-c cream, herbal day cream, and herbal saffron cream and so on.

Experimental Work:-

- **MECHANISM ACTION OF SKIN**

The skin is the outer covering of the body. It is the largest organ of the integumentary system.
The skin has multiple layers of ectodermaltissue and guards the underlying muscles, bones, ligaments and internal organs. Human skin is similar to that of most other mammals, except that it is not protected by a pelt. Though nearly all human skin is covered with hair follicles, it appears hairless.[7]



1. MATERIAL AND METHOD

Plant materials:

The proposed study of Aloe vera, Amla. Cucumber peel Collected from the local area.

. **Fig.3.Herbal Plant Profile**

Preparation of Extract:

Air dried and coarsely powdered of Aloe vera, Amla and cucumber peel.Were placed in Soxhlet separately, using petroleum ether and then successively with Ethanol. The extract was then concentrated to dryness under reduced pressure and controlled Temperature, and they were preserved in a Refrigerator.

Cream Formulation:

Beeswax, propylene glycol was taken in first beaker. Then heat on a water bath for uniform mixing. After few minutes oil phase was formed. Aloe vera extract and Amla extract,cucumber peel extract, Distilled water, white soft paraffin and glycerine, , zinc oxide , Sodium benzoate was taken in second beaker. Mixing all the ingredients by heating on a water bath, the aqueous phase was formed. Oil phase was added into aqueous phase and continuous stirring.

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Fig.4.Formulation Process

Table no.1 Formula of cream formulation

SR NO	INGREDIENTS	QUNTITY
1.	Aloe vera	1,5 gm
2.	Amla	1gm
3.	cucumber peels	0.8gm
4.	Bees wax	3.2gm
5.	White soft paraffin	9 ml
6.	Methyl paraben	0.3ml
7.	Distilled water	q.s
8.	Menthol	0.2ml
9.	Glycerine	1 ml
10.	Propylene glycol	1 ml
11.	Zinc oxide	0,7gm
12.	Sodium benzoate	0.1gm

2. RESULTS:

Evaluation Of Cream

Evaluation of herbal cream was following.

Physical Evaluation

Formulated herbal creams was further Evaluated by using the following physical parameter physical parameter colour, odour, consistency, and state of the formulation.[8]

Sr.No	Parameter	Results
1	Colour	White green
2	Odour	characteristics
3	State	Semisolid
4	Consistency	Smooth
5	Ph	6.7
6	Spredability	7.4 g.cm/cm
7	Washability	Easy washable
8	Non- irritancy test	Non-irritant
9	Viscosity	39015
10	Phase sepration	No phase sepration
11	After feel	Emollient

a) **Colour:**
The colour of the cream was observedby visual examination. The result was shows in table 2.

b) **Odour:**
The odour of cream was found to be characteristics.

c) **State:**
The state was cream was examined visually. The cream was solid in state result was shows in table 2.

d) **Consistency:**
The formulation was examined by rubbing cream on hand manually. The cream having smooth consistency.

e) **Ph:**
pH of prepared herbal cream was measured by using digital ph meter. The solution of cream was prepared by using 100 ml of Distilled water and set aside 2h. Ph was determined in three times for solution and the average value was calculated. Results were shown in table 2.

f) **Spreadability:**
spread ability of formulated cream was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for defined time

g) **Washability:**
formulation was applied on the skin and then ease extends of washing with water was checked. Results were shown in table 2

h) **Non- irritancy test:**
Herbal cream formulation was evaluated for the non-irritancy test. Preparation shown no redness and irritancy. Observation of the state was done for 24 h 28 [29].results was shown in table 2

J) **Viscosity-**
Viscosity of cream was done by using Brooke field viscometer at the temp of 25 Degree c. using spindle no, 63.at rpm. Results were shown in table 2.

K) **Phase sepration-**
The prepared cream was transferred in a suitable wide mouth container. Set aside for storage the oil phase and aqueous phase sepration were visualizing after 24h. Result were shown in table no.2

L) **After feel :**
Emoliency slipperiness and amount of residue left after the application of the fixed amount of cream was found to be good. Observation shown in table 2

DISCUSSION:

The present work was the formulation and evaluation of polyherbal cream. This cream formulation was o/w type of emulsion; hence this formulation was easily washed with plane water after application. The prepared formulation was good Spreadability. Viscosity and PH of the cream was good. Cream does not show any type of phase separation during storage. The cream was non- grassy in nature and easily removable after application. The formulation was Nonirritant and not harm to the skin.

By using turmeric, papaya, aloe-vera, neem and tulsi the cream showed multipurpose effect and all herbal ingredients were used showed different significant activities. Based on the results we can say that all formulation F1C, F2C and F3C were stable at room temperature and can be a safely used on the skin. Therefore according to statement of F2C is better formulation than F1C and F3C of formulation of herbal cream. The present work focuses on the potential of herbal extract from cosmetic purpose. The uses of cosmetic have been increased in many folds in personal care system. The uses bioactive ingredient in cosmetic influence biological functions of skin and provide nutrients necessary for the healthy skin. The prepared formulation showed good spreadability, no evidence of phase separation and good consistency during the study period.

3. CONCLUSION:

Formulation of cream was done by slab method and further evaluated by various evaluation parameters such as physical properties, PH, Spreadability, Washability, non-irritancy test, viscosity and phase separation of cream and gives good results.
Herbal product have been applied to human healthcare for immemorial time. Drug discovery in ancient was largely by serendipity and based on clinical practices. As understanding of therapeutic benefits deepens and demand for natural product increase, previously by chance discoveries evolve into active searches for new medicines. Many herbal product presently prescribed by physicians are either directly isolated from plant or are artificially modified versions of natural product. Scientists are looking for lead compound with specific structures and pharmacological effects often from natural sources. The tremendous progress made in life sciences has not only revealed many pathological process of diseases. The advantageous and permits certain natural compounds that are difficult to isolate and purify and compounds that are difficult to synthesize to be assayed. Natural product are beneficial without any side effect.

The present study successfully formulated and evaluated an herbal face cream using natural ingredients such as aloe vera, turmeric, neem, and

sandalwood, known for their beneficial properties on skin health. The cream exhibited desirable physicochemical characteristics including smooth texture, acceptable pH, good spreadability, and stable emulsion properties. Evaluation parameters such as homogeneity, skin irritation test, and stability studies confirmed the safety and effectiveness of the formulation.

The herbal ingredients contributed to anti-inflammatory, antimicrobial, antioxidant, and moisturizing effects, making the formulation suitable for regular cosmetic use. Overall, the herbal face cream demonstrated promising potential as a natural, skin-friendly, and effective alternative to synthetic cosmetic products. Further studies on long-term efficacy and large-scale stability would help in the commercial development of the product.

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