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Formulation and Evaluation of Multipurpose Herbal Cream By Using Nigella Sativa Seed

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Abstract: *To formulate and evaluate herbal cream using Aloe Vera gel, dimethyl sulphoxide extracts of Neem (Azardica indica) and Tulsi (Ocimumtenui florum) to give multipurpose effect. The goal of the research was to develop a herbal cream for moisturizing, nourishing, whitening, and treating various skin diseases. Aloe barbadensis (Aloe-vera leaves), Azadirachta indica (Neem leaves), and Ocimum sanctum (Tulsi leaves) are some of the basic drugs used to make the cream. The selection of components is based on the agents' various therapeutic characteristics. Various evaluation parameters are used to the cream. Black seed, oil, microcapsules, and their components have been used in various food processing, pharmaceutical, nu-traceutical, and cosmetics industries as functional ingredients for multiple purposes. Black seed and oil contain thymoquinone as a major component, which has anti-oxidant, -inflammatory, and -microbial properties, due to its phenolic compounds*

Keywords: Herbal cosmetic, Multipurpose cream, Black seed, Alo-vera, Neem, Tulsi, Skin irritancy

OBJECTIVE:-

To formulate and evaluate herbal cream using Aloe Vera gel, dimethyl sulphoxide extracts of Neem (Azadirachta indica) and Tulsi (Ocimumtenuiflorum) to give multipurpose effect. The primary objective of formulating a multipurpose herbal cream is to create a product that addresses various skin concerns with a single application, often using natural ingredients to provide moisturizing, anti-acne, anti-inflammatory, and antioxidant benefits. This formulation aims to simplify skincare routines and offer a product that can be used for multiple purposes, such as reducing acne, improving skin conditions like eczema and psoriasis, and adding a natural glow.

I. INTRODUCTION

Cream is defined as semisolid emulsions which are oil in water (o/w) or water in oil (w/o) type and these semisolid emulsions are intended for external application [1]. Cream is classified as oil in water and water in oil emulsion. It is applied on outer part or superficial part of the skin and its main ability is to remain for a longer period of time at the site of application. The function of a skin cream is to protect the skin against different environmental condition, weather and gives soothing effect to the skin. There are different types of creams like cleansing, cold, foundation, vanishing, night, massage, hand and body creams. The main aim of our work is to develop a herbal cream which can give multipurpose effect, like moisturizer, reduce acne and skin irritation, reduce skin diseases like eczema, psoriasis, dry skin, wrinkles, rashes etc. and also adding glow to the face. We have used three herbal ingredients in our preparation which are Aloe Vera gel, Neem, Tulsi. Aloe Vera gel is used as a moisturizer, to reduce pimples and acne and also used for treatment of burn wounds . Neem is used as an antifungal and anti-inflammatory and it is also used to reduce pigmentation, redness and itching of the skin . Tulsi is used to add glow to the skin and to promote wound healing .Nigella sativa seed are rich source of essential fatty acid. N.Sativa seed have medicinal effect such as antimicrobial, antihypertensive property. Black seed (Nigella sativa) is an annual flowering plant in the Ranunculaceae family and Plantae kingdom. Black seeds are mostly found in western Asia, the Mediterranean North Sea area, and western and southern Europe. The black seed is also described in the Bible as the "healing black seed". Nigella sativa seeds are rich source of essential fatty acids, unsaturated acids, vitamins, minerals, proteins, and carbohydrates5.There are also other seeds ,such as phospholipids, carotene,calcium, iron, and potassium. The biological effectsof these compounds on the human body are largely

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positive. They have shown prominent effects in the treatment of many diseases such as hypertension, headache, diabetes, inflammation, eczema, fever, dizziness, influenza, asthma and bronchitis.

PHYTOCONSTITUENT:-

1. Neem

Kingdom: Plantae (plants).
Division/Phylum: Magnoliophyta/Spermatophyta (seed plants). Class: Magnoliopsida (dicotyledons).
Order: Sapindales.
Family: Meliaceae (mahogany family). Genus: Azadirachta.
Species: A. indica (neem)
Use: Neem has anti-bacterial properties which get rid of pimples Neem lightens and blurs the scars left behind by acne Neem is anti-inflammatory in nature with fatty acids and glycosides

2. Alovera

Kingdom: Plantae (plants).
Phylum: Spermatophyta (seed plants). Subphylum: Angiospermae (flowering plants).
Class: Monocotyledonae (plants with single seed leaves).
Order: Asparagales (a group of flowering plants that includes lilies, asparagus, and aloes). Family: Asphodelaceae (a family of monocotyledonous plants, including aloes and asphodels). Genus: Aloe (a genus of succulent plants).
Species: Aloe vera (the specific species, also known as true aloe or Barbados aloe). Uses: Moisturizes dry skin Soothes irritated skin Remove sign of ageing

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3. Tulsi

Kingdom: Plantae (plants)
Division: Magnoliophyta (flowering plants) Class: Magnoliopsida (dicotyledons) Order: Lamiales (basil order)
Family: Lamiaceae (mint family) Genus: Ocimum (basil genus)
Species: Ocimum tenuiflorum or Ocimum sanctum
Use: Soothes skin condition like eczema Great for healing skin problem Good source of vitamin K
Super beneficial for skin Helping anti-aging

4. Nigella Sativa Seed:

Kingdom: Plantae (Plants)
Phylum: Tracheophyta (Vascular Plants) Class: Magnoliopsida (Dicots)
Order: Ranunculales
Family: Ranunculaceae (Buttercup family) Genus: Nigella
Species: sativa
Use: antimicrobial, and analgesic properties, and has been used to treat conditions like diabetes, hypertension, asthma, and

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LITERATURE SURVEY :-

1. Nikhil Nitin Navindgikar, K.A. Kamalpurkar, Prashant S. Chavan, (2020) Cream is defined as semisolid emulsions which are oil in water (o/w) or water in oil (w/o) type and these semisolid emulsions are intended for external application.

2. Somnath S Davkhar, Arti S Bhandari, (2023) Herbal cosmetics are products that are used to improve one's look. The goal of the research was to develop a herbal cream for moisturizing, nourishing, whitening, and treating various skin diseases.

3. Deepak Kadam, S.S Lele,(November 2017) The extraction of phenolic compounds from Nigella sativa seed cake was optimized in terms of % of EtOH, extraction time, extraction temperature and solid to solvent ratio to maximize the phenolic content yield.

4. Tehmina Sohail,Hina Imran,Rashid Ali Khan,(1January 20) he aim of present study was to evaluate herbal analgesic cream containing Nigella sativa oil as an active ingredient, standardization of Nigella sativa oil and evaluation of irritation/sensitization potential of formulation.

5. Afreen Usmani, Rania I. M Almoselhy, (2024) For the first time ever, this novel review enters the enigmatic world of the Nigella sativa L. (black seed), known for centuries as a potent source of healing including their relevance to the food and pharmaceutical industries. Written at professional and reference level, it is directed at normal readers with more professional scientists in pharmacy and food science affiliations to serve as a rich source of data on black seed. We embark on an exploration that encompasses the background, significance, and objectives guiding our exploration.

PLAN OF WORK:-

1) Literature Survey
2) Selection of Herbal drug
3) Determine Active Constituent of Herbal drug
4) Selection of Excipients
5) Selaction of Material and Equipments
6) Preparation of Formulation

MATERIAL AND METHOD:

Table 1: Collection of plant material

Sr. No	Ingredients	Roles
1	Aloe Vera gel	Anti-ageing, anti inflammatory, moisturizer, reduce acne and pimples.
2	Tulsi	Antibacterial, adds glow to the face
3	Neem	Promote wound healing, relieves skin dryness, itching and redness.
4	Bees wax	Emulsifying agent, stabilizer and gives thickness to the cream.
5	Liquid paraffin	Lubricating agent
6	Borax	Alkaline agent which reacts with emulsifying agent to form soap
7	Methyl paraben	Preservative
8	Rose oil	Fragrance

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Extraction processes :

i] Extraction Aloe Vera gel

Mature, healthy and fresh aloe Vera leaves were collected and washed with distilled water. Then after proper drying of leaves in hot air oven, the outer part of the leaf was dissected longitudinally using a sterile knife. Then the aloe Vera gel that is the colorless parenchymatous tissue was removed using the sterile knife.

ii] Extraction of neem leaves

Then it is filtered using muslin cloth to remove the fibers and impurities. Then the filtrate or the filter product which is a clear aloe Vera gel was used in the preparation. Neem leaves were collected and washed with distilled water and dried in hot air oven. After proper drying, leaves were powdered. Then 5g Neem leaves powder+50 ml dimethyl sulfoxide was taken in a volumetric flask and shaken for 3 d on REMI RSB-12 mechanical shaker. Then the solution was heated on a water bath at 80-100 ℃ and concentrated up to20 ml and then filtered using muslin cloth to remove impurities. Then the filtrate or filter product obtained, which is a clear solution or clear extract of Neem leaves, was used in the preparation.

iii] Extraction of tulsi leaves

Tulsi leaves were collected and washed with distilled water and dried in hot air oven. Then after proper drying, the leaves were powdered. Then 1g Tulsi leaf powder+10 ml dimethyl sulfoxide was taken in a volumetric flask and then shaken for 3 d on REMI RSB-12 mechanical shaker. Then the solution was heated on water bath at 80 to 100 ℃ for few minutes and then concentrated up to 5 ml and filtered using a muslin cloth to remove impurities. Then the filtrate or the filter product in which a clear solution or clear extract of Tulsileaves was used in the preparation.

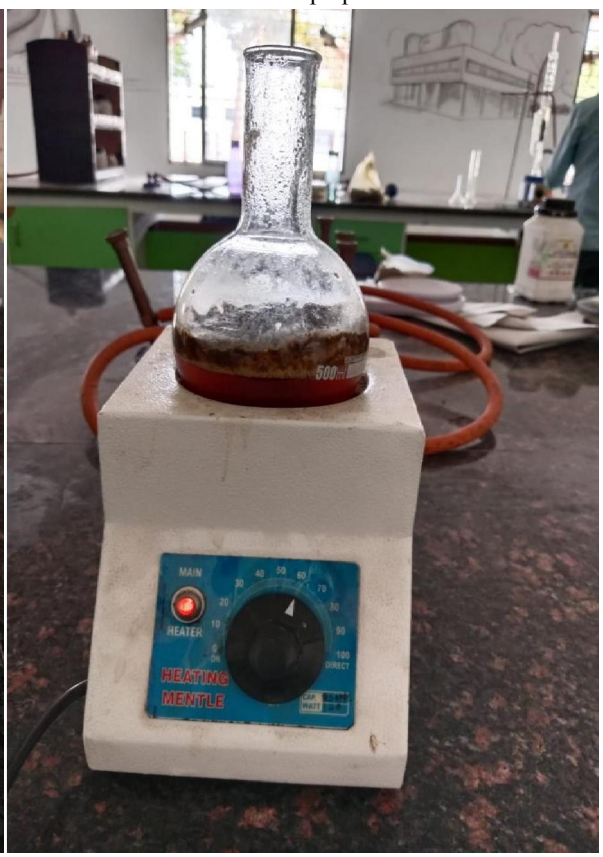

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Fig. Decoction method

Extraction procedure:

All experiment was carried out using 1 g seed cake powder. Different combination of four parameters, namely % of ethanol (0–100%), extraction time (60–120 min), temperature (40–60 C) and solid to the solvent ratio(1:10–1:20), were studied to optimize the extraction of phenolic compounds from the sample. After extraction, the solvent was removed under vacuum and the dried extract was stored at -22C until the further use.

Fig. Schematic of a Soxhlet extraction apparatus indicating the vapor and liquid extractant paths. The sample under extraction is cushioned by loosely packed ceramic fibers.

Formulation of cream:

Heat liquid paraffin and beeswax in a borosilicate glass beaker at 75 ℃ and maintain that heating temperature. (Oil phase). In another beaker, dissolve borax, methyl paraben indistilled water and heat this beaker to 75 ℃ to dissolve borax and methyl paraben and to get a clear solution. (Aqueous phase). Then slowly add this aqueous phase to heated oily phase . Then add a measured amount of aloe Vera gel, Neem extract, and Tulsi extract and stir vigorously until it forms a smooth cream. Then add few drops of rose oil as a fragrance. Put this cream on the slab and add few drops of distilled water if necessary and mix the cream in a geometric manner on the slab to give a smooth texture to the cream and to mix all the ingredients properly. This method is called as slab technique or extemporaneous method of preparation of cream. (For formulation table refer table 2) (For different cream formulations refer fig. 3).

Table 2: Formulation of Cream

Sr. No	Ingredients	Formulation 1	Formulation 2
1	Aloe-vera Gel	1.5 ml	1 ml
2	Neem Extract	0.5 ml	0.2 ml
3	Tulsi Extract	1.5 ml	1 ml
4	N. Sativa Seed Extract	1 g	1.5 g
5	Beeswax	3 g	3.5 g
6	Liquid Paraffin	10 ml	15 ml
7	Borax	0.2 g	0.4 g
8	Methylparaben	0.02 g	0.04g
9	Distilled water	Q.S	Q.S
10	Rose oil	Q.S	Q.S

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Evaluation of cream:

• Physical evaluation

In this test, the cream was observed for color, odor, texture, state

• Irritancy

Mark the area (1 cm) 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 h and reported.

• Wash ability

A small amount of cream was applied on the hand and it is then washed with tap water.

• PH.

5 g cream was taken and dispersed in 50 ml distilled water and then PH was measured by using digital PH

• Viscosity

Viscosity of cream was done by using Brooke field viscometer at a temperature of 25 ℃ using spindle No. 63 at 2.5 RPM .

• Phase separation

Prepared cream was kept in a closed container at a temperature of 25 100 ℃ away from light. Then phase separation was checked for 24 h for 30 d. Any change in the phase separation was observed / checked.

• Physical evaluation

In this test color, odor, texture and state of the three formulations were checked.

• Irritancy

Mark the area (1 cm2) on 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 hand reported. According to the results all the three formulations that is F1H, F2H and F3H showed no sign of irritancy.

RESULT:-

Sr.No	Parameter	Formulation 1	Formulation 2
1	colour	Faint green	Faint green
2	Odour	Pleasant	Pleasant
3	Texture	Smooth	Smooth
4	State	Semisolid	Semisolid
5	Irritancy	Nil	Nil
6	Washability	Easily washable	Easily Washable
7	P.H	6.7	6.2
8	Phase Seperation	No phase Seperation	No phase seperation
9	Spreadability	22.8	32.4
10	Geasiness	Non-greasy	Non-greasy

CONCLUSION:-

By using Aloe Vera gel, Neem and Tulsi the cream showed a multipurpose effect and all these herbal ingredients showed significant different activities. Based on results and discussion, the formulations F1H, F2H and F3H were stable at room temperature and can be safely used on the skin. The prepared herbal cream has best properties and having nutritional values using less chemical which protects the skin from the various skin problem. The herbal

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cosmetic formulation is safe to use and it can be used as the provision of a barrier to protect skin. The result of different tests of cream showed that the formation could be used topically in order to protect skin against damage. Natural remedies are more acceptable in the belief that they are safer with fewer side effects than the synthetic ones. Further research will carry out to check scientifically the synergistic action of formulation. Based on physical, chemical and biological studies, it is concluded that herbal analgesic cream containing Nigella sativa oil is stable formulation and safe for long term topical use for various muscular problems.

REFERENCE

1. Nikhil Nitin Navindgikar, K.A. Kamalpurkar, Prashant S. Chavan, (2020) Formulation and evaluation of multipurpose cream.Volume No.12, Pg.No.1-6.
2. Somnath S Davkhar, Arti S Bhandari, (2023) Formulation and evaluation of herbal cream.Volume No 14, Pg.No 21-27.
3. Deepak Kadam, S.S Lele,(November 2017) Extraction characteristics and bioactive properties of Nigella sativa seed.Volume No.5 Pg.No 34-48.
4. Tehmina Sohail,Hina Imran,Rashid Ali Khan,(1January 20) Standardization and skin irritation potential of herbal analgesic cream containing nigella sativa seed oil.Volume No.19, Pg.No 2-6.
5. Afreen Usmani, Rania I. M Almoselhy, (2024)Current trends in Nigella sativa seed(black seed) from traditional to modern medicine with advancesin extraction. Pg.No 1-13.
6. Manisha Yogesh Sonalkar, Sachin Annasaheb Nitave.(2016) Formulation and evaluation of polyherbal cosmetic cream. World J Pharm Pharm Sci pg no 72-91.
7. T Reynolds, AC Dweck.(1999) Aloe vera leaf gel: a review update. J Ethno Pharmacol Pg.No:31-37.
8. Priyanka Sharma, Amit C Kharkwal, Harsha Kharkwal, MZ Abdin, Ajit Varma.(2014) A review on the pharmacological properties of Aloe Vera. Int J Pharm Sci Pg No.31-47.
9. Sharma Pankaj, Tomar Lokeshwar, Bachwani Mukesh, Bansal Vishnu.(2011) Review on neem (Azadirachta indica): thousand problems one solution. Int Res J Pharm Pg No.97-102.
10. 5. KP Sampath Kumar, Debjit Bhowmik, Biswajit, Chiranjib, Pankaj, KK Tripathi Margret Chandira.(2010) Traditional Indian herbal plants Tulsi and its medical importance: a review. Res Rev: J Pharmacogn Phytochem .Pg.No 21-32.