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Formulation & Evaluation of Multi Herbal Cream

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ABSTRACT
This study concentrates on the development and assessment of a multi-herbal cream incorporating Aloe vera, neem (Azadirachta indica), and mari gold extracts for topical use. We chose herbal ingredients because they are well-known for their ability to kill germs, reduce inflammation, and protect the skin. The oil-in-water (O/W) emulsion method was used to make the cream, and it used the right excipients, like beeswax, liquid paraffin, borax, and methylparaben. The formulation that was made was tested for a number of physicochemical properties, such as pH, color, odor, uniformity, viscosity, type of emulsion, smear characteristics, and skin irritancy. The formulation's pH was between 6 and 7, which is normal for skin. The cream had a good mix, a smooth texture, and looked good. The emulsion type was confirmed to be O/W, which means it is not greasy and can be easily washed off. Tests for viscosity and smear showed that the product spread well and formed a smooth film on the skin. The irritancy test showed no signs of redness, swelling, or irritation after 24 hours of use.

I. Introduction
Azadirachta indica, the neem tree, is a member of the Meliaceae family. Medicine is made from the bark, leaves, and seeds. The root, flower, and fruit are also utilized less frequently. Leprosy, eye conditions, bloody noses, intestinal worms, upset stomachs, appetite loss, skin ulcers, heart and blood vessel ailments (cardiovascular disease), fever, diabetes, gum disease (gingivitis), and liver issues are alltreated with neem leaf. Additionally, the leaf is used to induce abortions and as a birth control method. Neem is used directly to the skin by some people as a mosquito repellant, a skin softener, and a treatment for head lice, skin conditions, wounds, and skin ulcers.

Neem is employed as a pesticide as well[1]. Since ancient times, a number of medicinal plants have been utilized as cosmetics and have demonstrated encouraging results on a variety of skin conditions, including acne, blackheads, and aging. spots, skin rashes, allergies, wrinkles, aging skin, skin-whitening products, etc. Ayurvedic, Siddha, and Unani medical systems have extensively documented the cosmetic potential of a number of common plants, including Aloe vera, Azadirachta indica, Annona squamosa, Aterocarpus heterophyllus, Carica papaya, Centella asiatica, Mangifera indica, Moringa citrifolia, Ocimum sanctum, Phyllanthus emblica, Psidium gujava, Terminalia arjuna, Terminalia chebula, and Vitis vinifera[2]. Creams are adaptable semi-solid emulsions that carefully integrate with either water distributed in oil (w/o) or oil dispersed in water (o/w). designed to be applied externally and stabilized using emulsifying agents. These formulations are designed to provide the skin with a variety of therapeutic benefits, including hydration, moisturization, protection, and effective transport of active substances[3] Creams with Herbs

For generations, people have used herbal creams as natural treatments for a variety of skin conditions and cosmetic applications. Herbal creams, which are made from plant-based substances, provide a comprehensive approach to skincare by utilizing the healing qualities of botanical extracts to nourish, shield, and revitalize the skin[4].

II. MATERIALS AND METHODS
Materials
Aloe Vera leaves were harvested from fully grown plants in a botanical garden, making sure they were free of pests and diseases. We purchased mari gold rhizomes from a nearby grocery market. Neem leaves were gathered from nearby, pesticide-free neem plants. The leaves were picked with care. Making the extract After being picked, aloe vera leaves were thoroughly cleaned with distilled water to get rid of any surface impurities and let to air dry. Using a sterile knife, the outer green rind was carefully cut off longitudinally, and the interior leaf pulp was filleted to extract the gel. Take out the fibers and contaminants. Until it was needed again, the aloe vera gel was kept in the refrigerator[4]. After being cleaned, neem leaves were dried for an hour at 80°C in a hot air oven. A mortar and pestle were used to

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grind the leaves into a coarse powder after they had dried. Twenty milliliters of distilled water were combined with five grams of neem leaf powder, and the mixture was heated for fifteen to twenty minutes.

After that, it was filtered through Whatman No. 1 filter paper and kept at room temperature in opaque containers to prevent light deterioration[5].

Formulation of Herbal Cream

In a borosilicate glass breaker (oil phase), heat liquid paraffin and beeswax to 75°C. Borax and methylparaben should be dissolved in distilled water in a different beaker and heated to 75°C using a water bath (aqueous phase). Stir until all of the solid particles are gone. Stir constantly as you gently mix the heated oily phase with the hot aqueous phase.

While aggressively swirling, add water drop by drop to the oily portion .Let the melted mixture cool until it reaches the right consistency. After the phases are mixed, quickly add precisely weighed extracts of aloe vera, neem, and mari gold to the emulsion, stirring constantly to ensure even dispersion and a smooth cream consistency[6-7] Add rose water for scent after the cream has formed, making sure to thoroughly mix to combine all the components. To avoid phase separation, the resulting cream was allowed to cool to ambient temperature while being stirred periodically. The cream was moved to sterile containers after it had cooled. For additional analysis, keep the cream refrigerated at 5°C [8–9].

Evaluation parameters of herbal cream

1.pH test:

A standard buffer solution was used to calibrate the pH meter.

Weighing and dissolving around 0.5g of the cream in 50.0 The pH of milliliters of distilled water was determined[10]

2.Odor and color:

Visual inspection was used to assess physical characteristics including color and odor.

3.Uniformity

The uniformity of the formulations was assessed both visually and tactilely[11].

4. Emulsion type being tested with dye:

The cream is combined with the scarlet crimson color. A drop of the cream was placed on a tiny slide, covered with a cover slip, and inspected under a microscope. The cream is O/W type if the ground is colorless and the dispersed globules appear red. In W/O type cream, the opposite situation takes place, meaning that the scattered globules appear colorless in the red background[12].

5. Viscosity

A rotational-type viscometer (Brookfield DVII, Germany TA spindle, 25±1°C) was used to measure the compositions' viscosity. Three replications of the measurements were made at 100 rpm (n: 3). Centipoise (cP) was used to record viscosity measurements[13].

6.Smear type:

The kind of film or smear that developed on the skin after the cream was applied was examined.

7. Test for irritability:

Mark an area (1sq.cm) on the left hand dorsal surface. After applying the cream to the designated area, the time was recorded.

Erythema, edema, and irritation were monitored and reported at regular intervals up to 24 hours.[14].

III. RESULTS AND DISCUSSION

We tested the multi-herbal cream with Aloe vera, neem, and mari gold extracts to see if it was good for putting on the skin. We looked at a number of physical and chemical properties and performance metrics.

The cream's pH was found to be between 6 and 7, which is close to the pH of healthy skin. This means that the formulation is good for the skin and won't irritate it when you use it.

The cream was a light greenish-yellow color and smelled nice because rose water was added. The look was smooth and pleasing to the eye, which meant that the formulation was good.

The uniformity test showed that the cream was homogeneous with no signs of phase separation or grittiness. This shows that the ingredients were mixed well and that the formulation is stable.

The emulsion type test with scarlet red dye showed that the cream is an oil-in-water (O/W) emulsion.

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This kind of emulsion is better for topical use because it doesn't leave a greasy residue, is easy to wash off, and makes it easier for patients to follow instructions. The cream's viscosity was just right, making it easy to spread without being too runny or too thick. It was easy to put on the skin because of the consistency.
The smear test showed that the cream goes on easily and leaves no oily residue, making a smooth film on the skin. This makes it more useful and looks better.
The irritancy test showed no signs of redness (erythema), swelling (edema), or irritation after 24 hours, which means the formulation is safe to use on the skin.

IV. CONCLUSION

The multi-herbal cream that was made was successfully tested and found to have good physicochemical and performance properties. The emulsion type was confirmed to be oil-in-water (O/W), which is good for putting on the skin because it doesn't leave a greasy residue and is easy to wash off. The cream exhibited appropriate viscosity, ensuring good spreadability and ease of application. It also made a smooth, non-oily film on the skin, which made it more acceptable for use in cosmetics.The irritancy test showed no signs of irritation, like redness or swelling, which means the formulation is safe to use on skin. The herbal cream that was made is stable, works well, and is well-liked by users. This makes it a good choice for cosmetic and minor skin care uses.

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