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## FOMULATIONTION AND EVALUATION OF HERBAL COLD CREAM FROM BANANA LEAFS, *CATHARANTHUS ROSEUS*

PANDA SR\* AND PATEL KM

Department Of Chemistry, Parul Institute of Applied Science, Parul University

Limda-391760 Waghodiya, Vadodara, Gujarat. India

\*Corresponding Author: Dr. Sujata Rani Panda: E Mail: [sujata.panda20165@paruluniversity.ac.in](mailto:sujata.panda20165@paruluniversity.ac.in)

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### ABSTRACT

Herbal cosmetic are products intended to enhance and beautify human appearances. In order to nourish and moisturise the skin, the current study set out to manufacture and assess herbal cold creams that contained plant extracts made utilising the water in oil method. Turmeric extract and neem oil are used to make the cold cream. Utilizing several evaluation techniques, the quality of the formulated product was evaluated. In the formulated cream, there was no change in the physical characteristics. The cream formulation demonstrated good consistency and spreadability, homogeneity, pH, non-greasy properties, and no signs of phase separation over the research study time.

**Keywords:** Water in oil emulsion, Banana leaves, *Catharanthus roseus*, neem oil, cold cream

### INTRODUCTION:

The word "cosmetic" comes from the Greek verb "cosmetics," which meaning to embellish. Since then, any substance utilized to enhance beauty or promote look is referred to as a cosmetic [1].

Actually, the term "cosmetics" dates back to Roman times. The word "cosmetics" originated from these slave women, known as "cosmetic," who often made them. Cosmetics are applied to improve appearance. There have been many millennia of make. The

Egyptians were the first people that were known to employ cosmetics to improve their appearance. In those days, makeup consisted of simple eye makeup or body-part materials. In today's society, cosmetics is significant both for males and females [1]. Cosmetics have grown in importance as more people strive to look and feel young and attractive. In several situations, creams can be used to cleanse the face. Anti-aging lotions that can maintain younger-looking skin for many years have recently been developed. Cleansing cream, soap, and water are the greatest degreasers. Creams for cosmetic use act as a skin nourishment for rough, dry, and chapped skin. It primarily lubricates, softens, and cleans the skin of undesired dirt. Vaseline and Lanolin are two examples of commonly used fat creams. Gelatine, which serves as the foundation for the skin, and soap are both made using dry creams [2].

The water-in-oil emulsion known as cold cream [3] is compared to other semisolid dosage forms or formulations, cold cream provides a longer contact time at the application site. They make the skin look elegant and keep it from being overly oily. It gives the skin an emollience because of the oil phase. In addition to cooling the body and allowing waste products to be removed from pores, the cold cream's purpose is to replenish

hydration for dry skin [1]. It may be simply washed away and watered down. When used on the skin, they do not irritate. The skin receives additional conservation from the water phase. At body temperature, it becomes liquefiable. Through the skin's natural pores, it permeates the epidermis.

#### **Bees wax:**

At first, the only natural wax used in commerce was beeswax. The term "wax," which comes from the Old English word "weax," originally solely applied to the wax produced by the European honeybee *Apis mellifera*, but it started to be used for other natural compounds as early as the 19th century, including ozocerite, which had some qualities similar to beeswax. Since the beginning of time, beeswax has valued as a resource; one early example is its inclusion in the 9th-century Viking ship discovered at Oseberg [4].

Beeswax is being used in a variety of industrial, pharmaceutical, and medical applications. Early research on plants enabled people to employ the indigenous flora to treat illnesses. These investigations have been going on for a while now in an effort to find novel treatments for different diseases. Recent studies on plants with a long history of folk medicine use have revealed a wealth of knowledge about the physiologically active

chemical elements thought to be responsible for many purported therapeutic properties [5, 6].

Like many other lipids, beeswax is composed of a variety of classes of constituents, and each of these classes is composed of a number of compounds with chain lengths that vary by two carbon atoms. Since techniques like distillation and crystallisation make it nearly difficult to separate wax components, Since the invention of advanced chromatographic techniques like gas-liquid chromatography in the 1960s, progress in understanding the precise composition beeswax has only been possible (GLC)

#### **Jojoba oil:**

The native Papago Indian term "howhowi" has been distorted into the word "jojoba," which is pronounced "ho-ho-ba." Many other names, including bucknut, coffee nut, goatnut, pignut, nutpush, goatberry, sheepnut, and lemon leaf, are also used to refer to jojoba [7]. jojoba plant's seeds.

The When the jojoba plant's various organs were examined for the amount of wax, it was discovered that the seeds—which make up around 50–52 percent of the seed weight—contain the majority of the wax in the plant [8]. Esters make up the majority of jojoba wax, with free acids making up the remainder.

Hydrocarbons and free alcohols. Long straight-chain fatty acids and higher molecular weight monohydric alcohols, such as C20 and C22, are joined to form esters. Both the fattyacids and the alcohols are cis-monounsaturated at the (-9) position. There are also a few triglyceride esters [9-12].

#### **Essential oil:**

According to Genesis 1:29. ""God's gift to humans is every plant with a seed and every tree with a seed in its fruit. In light of this, it is evident that essential oils (EOs) derived from plants have played a significant role throughout history. There are numerous recorded records of the extraction and usage of EOs from various historical periods, including India (5000 BC), Mesopotamia, and Greece (3000 BC) [13, 14].

Since its discovery, EOs have been utilised in a variety of products, including culinary tastes and additives, medications, aphrodisiacs, cosmetics, and even cult rites. Currently, EOs are generating more interest for both research and a variety of applications. Due to the vast range of applications for EOs in food, medicine, cosmetics, aromatherapy, and agriculture, their market demand has expanded. As a result, 40 000–60 000 tonnes of EOs are produced each year with a market worth of over 700 million US dollars [15].

## MATERIALS AND METHODS

Local market provided Beeswax, jojoba oil, essential oil, neem oil, banana leaf, *Catharanthus roseus*, rosewater, lemon water,

borax powder and other equipments from Parul University.

### Preparation of Herbal cream

Formation can be prepared by adding two different phase which are as follow:

Table 1

| S. No. | Ingredients                | Quantity |
|--------|----------------------------|----------|
| 1      | Bees wax                   | 10gm     |
| 2      | Jojoba oil                 | 1.0ml    |
| 3      | Banana leaf                | 5gm      |
| 4      | <i>Catharanthus roseus</i> | 3gm      |
| 5      | Neem oil                   | 5ml      |
| 6      | Rose water                 | 20ml     |
| 7      | Lemon juice                | 2ml      |
| 8      | Essential oil              | 3ml      |

Phase 1: By using indirect heat, melt the solid ingredients. Next, add all the oils and thoroughly stir.

Phase 2: Using heat to help dissolve the borax in water.

While the wax and oil combination is still hot, gradually add the phase 1 into the phase 2

while stirring continuously. After five minutes of constant stirring, take the pan from the heat, and whisk the mixture once more until it reaches room temperature. This cream can be made thicker than other creams by including more wax.



### Evaluation of Cream:

**Physical properties:** The colour, smell, and look of the cream were scrutinised [16, 17].

**Washability:** Observations were made when the cream was being administered to the hand and while [16, 17].

**pH:** Utilizing a standard buffer solution, the pH metre was calibrated. A digital pH metre was used to measure the pH of 0.5 g of cream that had been dissolved in 50.0 ml of distilled water [16-18].

**Irritancy test:** On the left dorsal surface, mark a 1-square-centimeter region. The cream was used to treat the designated region, and the duration was recorded. Irritation, erythema, and edoema were monitored and reported if present at regular intervals for up to 24 hours [19, 20].

**Test for microbial growth:** The designed cream was inoculated onto the prepared agar media using the steak plate method, and a controlled was created by leaving out the

cream. The plates were put in the incubator, where they would stay for 24 hours at 37 C. The plates were removed from the incubator after the incubation period, and the microbial growth was examined and contrasted with the control [9, 11].

## RESULT AND DISCUSSION:

The evaluation's findings are displayed in the **Table 2**. prepared formulation cream was Cream colour. Smoothness and a lovely aroma characterise it.

**1: Physical Properties:** Colour, smell, and texture were used to evaluate the physical qualities of the cream formulation.

**2: Washability:** using tap water to wash, the skin cream could be readily removed.

Table 2

| S. No. | Parameter | Evaluation   |
|--------|-----------|--------------|
| 1      | Colour    | Cream Colour |
| 2      | Odour     | Pleasant     |
| 3      | Texture   | Smooth       |

**1: pH of the cream:** It was discovered that the cream's pH fell between 5.2 and 6.4, which is a favourable range for the pH of skin. The herbal remedy had a pH that was closer to what the skin needed, or 6.4, than expected.

**2: Irritancy test:** The cream's formulation exhibits no redness, edoema, irritation, or inflammation throughout trials. It is okay to use the cream as it is designed.

**3: Antibacterial test:**



This study looked into the antimicrobial activity of cold cream in-vitro against microorganisms. Agar plate method was used as a standard procedure to screening the formulated cold cream antibacterial effectiveness on various microorganisms. The microorganisms used to assess the anti-microbial activity is *Escherichia coli*. using sterile Petri dish plate was poured with the solution of nutrient agar and allowed to solidify. After solidifying, the subculture bacteria were inoculated into the nutrient's agar media and one cavity was created there. It was noted that the sample should be positioned at the cavity's level. The plates are put in the incubator at 37°C to test the activity. The plate for inhibition zone formation were observed after 24 hours. The inhibition region is used to calculate the anti-microbial formulation activity. After 24 hours of incubation at 37°C, there were no signs of microbial development. The plate was again kept for 24 hours and the antimicrobial activity was obtained against *E.coli*. From the above mentioned process one can simply synthesize the cold cream of banana leaf and *Catharanthus roseus*.

#### CONCLUSION:

From the aforementioned findings, it can be inferred that during the research period, there was no phase separation and the cream

formulation demonstrated good consistency and spreadability, homogeneity, pH, and non-greasy properties. Given that the polyherbal cold cream was created using herbal extract, it can be inferred from the study above that its use is safe. Being safer and having fewer adverse effects than synthetic medicines, natural ones are more widely accepted. Therefore, there is now a huge market for herbal cosmetics since the benefits of herbs in cosmeceuticals have been greatly enhanced in the personal care system. It would be extremely acceptable if a herbal cream that uses herbal extracts to decrease, banana leaf, *Catharanthus roseus* patient compliance and is non-toxic, safe, and effective.

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