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RESEARCH ARTICLE

Formulation and Evaluation of Herbal Lip Jelly Containing Hylocereus Polirhizus Alcoholic Extract for Lip Shade

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ABSTRACT

People nowadays are looking for naturally formulated cosmetics, including lip jelly. Hylocereus Polirhizus extract was used in the formulation of Lip jelly. Lip jelly was found to be similar to lipstick and lip balm in terms of efficacy. Lip jelly protects the lips from the weather and gives them a good look. Synthetic colours are commonly used in today's world, which has negative implications. Ancient people used roots and herbs to produce cosmetics that were found to be healthy for humans. In India, Hylocereus Polirhizus is a natural dyeing agent that gives the formulation a red or purple colour. The new lip jelly formulation is made with a natural dye extracted from Hylocereus Polirhizus. Colour, odour, spreadability, pH, melting point, and other organoleptic properties are evaluated. The formulation was found to be odourless and had a appealing colour. The pH was between 6.0-7.0, the melting point was between 54-55°C, and the viscosity was between 442-630 cp. The established lip jelly properties were found to be satisfactory.

INTRODUCTION

For thousands of years, natural products have been used as medicines. Many of the drugs have pharmacological activity that has been confirmed, and the drug has been licenced for use in humans [1]. Lip colouring is an ancient technique for improving the elegance of the lips and adding a glamorous touch to face make-up. The spectrum of colour colours, textures, and lustres has been extended as a result of this. This can be seen in the hundreds of shades of lip jelly, lip balm, and lipstick available to meet the demands of women [2]. Cosmetics are useful products commonly used worldwide to preserve and enhance the general appearance of the face and other parts of the body, such as skin, eyes, hair, hands, etc. The formulations representing cosmetics associated with active bio-ingredients, neutraceuticals, and pharmaceuticals are herbal cosmetics. The preparation representing cosmetics associated with active bio-ingredients, neutraceuticals, and pharmaceuticals is herbal cosmetics. Cosmetics are items used to cleanse the skin and to beautify it. Herbal cosmetics consist of floras such as ashwagandha, sandal (chandan), saffron (kesar) and many more which all the other essential components are augmented with good nutrient sand. Cosmetics are products which use herbs in the form of crude or extracts. Deep in the Rigveda, Yajurveda, Ayurveda, Unani and Homeopathic system of medicine, the basic idea of skin care cosmetics lies. In this modern era, herbal knowledge and expertise are being combined with advanced cosmetic technology to create a natural and elegant beauty product that is appropriate to a wider range of people. It is, basically, beauty invented by nature and mastered by technology. Herbs have the benefit of having no or least negative effects and have a large variety of customer enforcement. Of the approximate Rupees 2000 crore in the total cosmetic industry in the country, the herbal cosmetic market has a share of nearly Rupees

200 crore. The overall demand for cosmetics is rising at an annual pace of 20-25 %. Around 60 % of this growth is that of the herbal cosmetic market. In diseases such as heart issues, digestive disorders and mental exhaustion, herbal extracts in liquid and other types have proven to be a panacea. In certain cases, the accuracy of herbal extracts was detected more than that of English medicines that normally consist of complex chemicals. Herbal extracts are much less likely than any other herbal products to have side effects. That's why herbal extracts are claimed to be the same remedies and medications as the common man. Also, herbal extracts have shown commercial aspects. Many people suffer from chapped lips in the winter, but the issue may also occur in the summer [3].

Lip jellies are often eaten away by the consumer, so health authorities must analyse the ingredients that go into the lip balm at a microscopic stage. The dyes that lead to the lip jelly colour are poisonous to humans if ingested. Lips provide a small amount of melanin, which offers some sun protection. When used as part of a larger regimen, many organic products like Ghee, Honey, and vitamin E can help keep lips hydrated and safe. Since the dawn of time, cosmetics have been in high demand [4]. These days, people are more interested in cosmetics that are made from natural ingredients. Lip jelly formulas are the most commonly used cosmetic items for enhancing the attractiveness of lips and giving a glamorous touch to makeup. Lip jellies are a natural way to keep your lips safe and moisturised. Cosmetics are a form of utility product that is commonly used around the world to preserve and enhance the appearance of the face and other parts of the body, such as the skin, eyes, hair, and hands. Herbal cosmetics are cosmetics that contain active bio-ingredients, neutraceuticals, and pharmaceuticals [5, 6]. Cosmetics are cosmetics that are added to the skin to cleanse and beautify it. Egyptians are credited with being the first to use cosmetics in 4000 B.C [7-9].

Pharmaceuticals are basically drug products that affect the structure or function of the body and are characterised as products that prevent, reduce, treat, or cure disease [10-14]. According to the European directive (European commission), Cosmetic products are defined as "any material or preparation intended to be put in contact with the various external parts of the human body (epidermis, hair system, nails, lips, etc.) or with the teeth and mucous membranes of the oral cavity with the sole or primary purpose of cleaning, perfuming, changing their appearance, correcting body odours, and protecting them or a combination of these purposes [15-21].

Lip Disorders:

1. Swelling

Lips can swell as a result of an allergic reaction. Sensitivity to certain foods or beverages, medications, lipstick, or airborne irritants can cause the reaction. Lips typically return to normal after a cause has been detected and removed. However, the cause of the swelling is often unclear.

2. Sun Damage

Sun damage may cause the lips to become hard and dry, particularly the lower lip. Damage with red speckles or a white filmy appearance suggests damage, which raises the risk of cancer in the future. Lips can be shielded from this form of damage by using a sunscreen-containing lip balm.

3. Inflammation

The corners of the mouth can become sore, irritated, red, cracked, and scaly as a result of lip inflammation (cheilitis). Cheilitis can be caused by a lack of vitamin B2 in the diet.

4. Discoloration

Around the lips, freckles and irregularly shaped brownish areas (melanotic macules) are normal and can last for years. These markings aren't something to be worried about. Multiple, tiny, scattered brownish black spots may be a symptom of Peutz-Jeghers syndrome, a genetic condition in which polyps develop in the stomach and intestines.

5. Sores

A raised spot on the lip or a sore with rough edges may be a symptom of skin cancer. Other sores may occur as a symptom of another medical condition, such as an infection with the oral herpes simplex virus or syphilis. Others, such as keratoacanthoma, are uncertain in origin. Synthetic colourants are currently used in lip cosmetics, which can cause swelling, sun damage, inflammation, discoloration, and sores. Nature is awash in colours that are beneficial to humans. The study was designed to extract natural colours and use it for development of herbal lip jelly.

Lip jellies are moisturisers that are applied to the lips to avoid them from drying out and to shield them from the elements. Many chemical-based lip balms are currently available on the market from companies such as The Body Shop, Nivea, Himalaya, Blistex, and others [22-24].

While references to lipstick apply since it is a cosmetic form similar to lip balm, the cosmetic literature reports minimal data on this type of formulation [25-28]. This resemblance applies to organoleptic and stability criteria such as temperature tolerance, good taste, and innocuousness, smoothness during application, adherence, and deliberate removal ease. Lip jelly and lip gloss are not identical, with the former being a product for both men and women [29-30].

Lip jelly has recently come under the attention of many health watchdogs. It has been discovered that lip jelly is often eaten away by users, resulting in the ingredient being swallowed unintentionally in the user's body, where the dye contained in the lip jelly is harmful to customers in mild form and can cause nausea, dermatitis, and drying of the lips. To make lip balms, the concentration of the main ingredients, such as butters, oils, and waxes, as well as other excipients, must be balanced. To preserve safe and radiant skin, many people seek out weekly facials, daily skin scrubs, anti-aging lotions, and a range of other items. However, with all of the emphasis on healthy skin, lip care is often ignored. Natural lip jelly is a safe and efficient way to keep your lips protected. Lip jelly is often eaten away by the consumer, so health authorities must analyse the ingredients that go into the lip balm at a microscopic stage. The dyes that contribute to the colour of the lip balm are poisonous to humans if ingested [31].

The lips are prehension, suction, and speech organs. The skin, superficial fascia, orbicularis muscle, and muscles inserted around it make up this structure (areolar tissue & mucous membrane). Dry red mucous membrane covers the lips' edges, which is continuous with the skin and includes various vascular papillae and contact corpuscles [4]. The coronary vessels that fully encircle the buccal orifice near the free margin of the lips are located in the areolar tissue or sub mucous layer. The superior and inferior coronary arteries that emerge from the face are known as coronary vessels.

Advantages and Disadvantages of Natural Lip Jelly:

Advantages of Natural Lip Jelly

- **a.** Lip jelly help to protect the natural health and beauty of the lips.
- **b.** Sun block lip balms are proved to prevent ultraviolet rays from hurting the lips.
- **c.** They are not gender specific products and both men and women can use them.
- **d.** Lip jelly products help to protect lips affected by cold sores, chapping and dryness.
- **e.** The substance should not cause irritation or dryness when it comes into contact with the skin, and it should allow the creation of a homogeneous layer over the lips to protect the labial mucous from environmental factors such as UV radiation, dryness, and pollution.
- **f.** It refreshed, renewed and also addresses lip-related symptoms resulting from colds, flu and allergies.
- **g.** The use of natural lip cosmetic to treat the appearance of the face and condition of the skin.

Disadvantages of Natural Lip Jelly

- **a.** Lip jelly addiction is another disadvantage usually seen with the use of them.
- **b.** Some companies make lip jelly purely for cosmetic reasons, ignoring the skin's softness and health benefits. Such products can deteriorate the natural colour, softness, and radiance of the lips over time.
- **c.** The naturally derived colours and flavours are more difficult to obtain and also have issues related to stability in the products
- **d.** Natural oils have other disadvantages such as greasier, comedogenic, and less spreadability [32-34].

MATERIALS AND METHODS

Collection of Plant Material

Hylocereus Polirhizus were procured from the local market.

Extraction of Colour Pigments from Plant Constituents

The colour pigment was extracted using the decoction process, which involved boiling the beetroot with ethanol. The vegetable content was cut into slices measuring approximately 21 mm in length, 5 mm in width, and 1-2 mm in thickness, and boiled in ethanol for 15 minutes at 60 to 80°C. The starting ratio of crude drug to ethanol is set, for example, at 1:4 or 1:16, and the

volume is reduced to one-fourth of its original volume during the extraction process by boiling. The concentrated extract is then filtered and used in the formulation as is. It was possible to obtain a dark reddish-brown extract. To eliminate the excess moisture, the concentrated extract was stored in desiccators. For further analysis, the dried extract was sealed in an airtight glass jar.

Preparation of Herbal Lip Jelly

Honey, petroleum jelly, lanolin, strawberry essence, and vanillin were added to the herbal lip jelly made from ethanolic extracts of Hylocereus Polirhizus roots, as per the formulation in Table 1. After melting the petroleum jelly and lanolin, the required amount of beetroot extract was added to the base mixture, followed by honey, strawberry essence, and vanillin, and the mixture was allowed to cool to room temperature only.

Table 1: Formulation of herbal lip jelly

Ingredients (gm)	F1	F1	F1	F1
Ethanolic extract of *Hylocereus Polirhizus*	1	0.7	0.5	0.3
Petroleum jelly	5	6	6	5
Lanolin	2.5	2.5	3.5	3.5
Vanillin	0.1	0.1	0.1	0.1
Honey	q.s	q.s	q.s	q.s

Evaluation of Herbal Lip Jelly

The prepared herbal lip jelly is evaluated for its physical properties like colour, odour, pH, melting point, spreadability and viscosity.

- **Colour and Odour**

Colour and appearance were measured under a microscope at 10x magnification, while odour was compared by a panel of evaluators (three groups of evaluators, each with three individuals) who gave the perfume stability of the formulation a + mark as a result.

- **Test for Spreadability**

The spreadability test was carried out by repeatedly applying the substance to a glass slide at room temperature to check for uniformity in the protective layer formulation and whether the stick fragments deformed or split during application for acceptable results of various formulations.

- **Melting Point**

The lip jelly was melted to establish the melting point, and the molten preparation was filled into the capillaries and allowed to cool to return to its original state. The thermometer was then attached to the capillary, and the whole system was submerged in water at a precise temperature. The melting point of the lip jelly was determined by calculating the temperature at which it became completely molten.

- **pH Parameter**

A automated pH metre was used to assess the pH of formulated herbal lip jellies. 2.5 gm of gel is precisely measured and distributed in 25 ml of distilled water before being processed for two hours. The pH of each formulation was calculated in triplicate, and the average values are shown.

- **Viscosity**

The viscosity of the formulation was calculated using a Brookfield viscometer with spindle number 96 and a speed of 10 rpm. The spindle was rotated at a speed of 2.5 rpm. Before the tests, samples of lip jelly were allowed to settle for 30 minutes at the test temperature (25-10 c). The average was determined after triplicate readings were taken.

RESULTS AND DISCUSSION

The results of evaluation parameters of prepared herbal lip jelly formulations are shown in below Table 2 and 3.

Table 2: Evaluation of Colour, odour and spreadability

Formulation	Colour	Odour	Spreadability
F1	Reddish	+++	Good
F2	Reddish pink	+++	Good
F3	Reddish yellow	+++	Intermediate
F4	Reddish orange	++	Intermediate

Very Good +++
Good ++
Average +

The colour of the preparation was found to be pleasing, out of which F2 formulation gives a more appealing reddish pink colour when compared to the other formulations. Among the four formulations, the F1 and F2 formulations were found to have very good odour and the F4 formulations were found to have good odour. Among the four formulations, the F1 and F2 formulations were found to have good spread ability and F3 and F4 formulations were found to have intermediate spread ability.

Table 3: Evaluation of Melting point, pH and viscosity

Formulation	Melting point (°C)	pH	Viscocity (cps)
F1	54.6	6.4	458
F2	55.4	6.8	562
F3	55.5	6.5	630
F4	55.8	7.7	442

The melting point of the formulations was found to be good in the range of 54-55°C. The pH of all the formulations was excellent and found to be in the range of 6.0-7.0. The viscosity of the formulation was found to be in range 442-630 cps at 10 rpm.

CONCLUSION

The present study focuses on the use of herbal ingredients in the preparation of lip jelly that has little to no side effects. Hylocereus Polirhizus was selected for the formulation because of its ease of availability and promise of a bright colour. Physical properties such as viscosity, pH, melting point, and colour were tested on the prepared lip jelly, which produced promising results when compared to commercially available lip jelly. As a result, we can infer that using Hylocereus Polirhizus natural dyes in the preparation of lip jelly is a positive step toward balanced herbal cosmetics.

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