

Formulation And Evaluation Of An Antimicrobial Moisturizer Cream from Clitoria Terneta Flower Extract

Bhakti Ingale and Dr. Bhalekar S. M.

Department of Pharmaceutics
Samartn Institute of Pharmacy, Belhe

Abstract: *Butterfly pea flowers are rich in anthocyanins, natural antioxidants that decelerate the aging process and prevent skin aging. Butterfly Pea Flower (Clitoria ternatea): Rich in antioxidants, particularly anthocyanins, butterfly pea flower helps c radicals, reducing oxidative stress on the skin. This can prevent premature aging and promote a youthful complexion. Additionally, its peptides aid in moisture retention, keeping the skin hydrated and supple. Neem (Azadirachta indica): Neem is renowned for its potent antimicrobial, antibacterial, and anti-inflammatory properties. It effectively combats acne-causing bacteria, soothes irritated skin, and aids in healing minor wounds. Regular use can lead to clearer and healthier skin. Tulsi (Ocimum sanctum): Tulsi, also known as holy basil, possesses strong antibacterial and anti-inflammatory effects. It helps prevent acne breakouts, reduces redness, and calms irritated skin. Its antioxidant properties also protect the skin from environmental stressors, promoting a radiant complexion. Extreme environmental conditions will consequently become a disturbance on all phases of plant growth. Malaysia is one of the developing countries that face challenges of extreme environmental conditions from climate change such as water availability and soil salinity. In response to global climate change, plant are trying to survive through several adaptation mechanisms. Clitoria ternatea or also known as Butterfly peaflower is a potential plant that can tolerate different environmental parameters.*

Keywords: Butterfly pea flower extract, Clitoria ternatea benefits, herbal skin care Hydrating skincare, Anti-aging moisturizer

I. INTRODUCTION

Plants respond to stress and extreme environments by changing their internal processes, which can affect the production of beneficial compounds. These compounds, called secondary metabolites, can help plants adapt to stress. Factors like climate, water, soil quality, and fertilizers can also impact the types and amounts of these compounds produced by plants.(1)Clitoria ternatea, also known as butterfly pea or blue pea, is a tropical flower that's moderately resistant to environmental stress. It contains beneficial compounds that could be useful in industries. This flower is commonly found in gardens and grows wild in many places.(2)Clitoria ternatea is a type of legume plant that can grow differently depending on its environment. It's originally from countries like Zimbabwe, Ghana, and Indonesia, but has been introduced to other places like Australia, America, and South Africa.(3)Clitoria ternatea has many common names due to its wide distribution. For example, in Malaysia, it's called "bunga telang", while in Konkani, it's known as "shankha pushpa" or "gokarna".(4) Clitoria ternatea is known by many names, including:

- Blue Pea
- Aparajita (Bengali)
- Aparajit (Hindi)
- Kokkattan (Tamil)
- And many others in different countries and languages.(5)Moisturizer cream are used on normal and dry skin. It helps to protect the skin from wrinkle, skin aging,acne,remove tan and make glowing skin Moisturizer cream are semi solid



emulsion like a milky moisturizer with gel like consistency. Moisturizer emulsion are in water based rather than oil based they make it good product which is suitable for all types of skin and helps for sensitive skin. Creams help for skin shine. Creams help to fight acne, remove tan, treat scars. Moisturizer cosmetic preparation used for protecting moisturizing and lubricating the skin. Butterfly pea flower is the active ingredient which helps in skin repair, keep skin glowing, extremely rich in antioxidants and is rare. It is easily washable, it protects the skin for long time. Cosmetic cream moisturizers are essential skincare products designed to hydrate and nourish the skin. They help maintain skin elasticity, prevent dryness, and protect against environmental stressors. These moisturizers are formulated with a combination of water, oils, humectants, emollients, and active ingredients such as vitamins, antioxidants, and botanical extracts to enhance skin health. The idea of beauty and cosmetics has existed since ancient times. Indian herbs are well-known and valued all over the world. Herbal cosmetics are becoming increasingly popular in the global market and are a precious gift from nature.

People prefer herbal products. Herbal cosmetics are defined as the beauty products which possess desirable physiological activity such as healing, smoothing appearance, enhancing and conditioning properties because of herbal ingredient. Now-a-days the usefulness of herbs in the cosmeceutical production has been extensively increased in personal care system and there is a great demand for the herbal cosmetics. Cosmetics are the substances intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, and altering the appearance without affecting the body's structure or functions. The appearance without affecting the body's structure or functions. But the usage of synthetic products becomes very harmful from long time for the youth as well as our environment. Various synthetic compounds, chemicals, dye and their derivative proved to cause various skin diseases having numerous side effects. Thus we are using herbal cosmetics as much as possible. The basic idea of skin care cosmetic lies deep in the Rig-Veda, Yajurveda, Ayurveda, Unani and Homeopathic system of medicine.

Advantages

- Using this moisturizer can help prevent wrinkles.
- Not as oily as some other creams.
- Keeping your skin moisturized keeps it youthful.
- When compared to manufactured cosmetics, they are incredibly effective in small quantities.
- Hydrate skin
- Make skin glow and shine.

Disadvantages

- Herbal medications take longer to take effect than natural dosage forms.
- Additionally, ongoing treatment is needed.
- The manufacturing process is intricate and taking time.
- The majority of natural medications are difficult to find.
- Taste and smell are tough to disguise.
- Not as long-lasting as moisturizers.



A moisturizer cream is a skincare product that helps to hydrate and soften the skin. It typically contains ingredients that:

1. Lock in moisture
2. Soothe dryness
3. Improve skin elasticity
4. Protect against environmental stressors

Moisturizer creams can be used to:

1. Hydrate dry skin
2. Reduce fine lines and wrinkles
3. Improve skin texture
4. Enhance skin health

There are various types of moisturizer creams available, including:

1. Day creams
2. Night creams
3. Facial creams
4. Body creams

When choosing a moisturizer cream, consider your skin type (normal, dry, oily, or combination) and specific skin concerns (acne, aging, sensitivity).

Some special features of creams, such as moisturizer creams, can include:

1. Hydration: Providing long-lasting moisture to dry skin.
2. Soothing: Calming irritated or inflamed skin.
3. Anti-aging: Reducing fine lines, wrinkles, and age spots.
4. Protection: Shielding skin from environmental stressors like pollution and UV rays.
5. Nourishment: Enriching skin with vitamins, antioxidants, and essential fatty acids.
6. Lightweight: Non-greasy texture for easy absorption.
7. Skin elasticity improvement: Enhancing skin firmness and suppleness.

Some creams may also have specific benefits like:

1. Anti-inflammatory properties
2. Antimicrobial properties
3. Brightening or evening skin tone
4. Firming or lifting effects

The specific features would depend on the cream's formulation and intended use.

Overview of cream

A moisture cream is a skincare product designed to hydrate and nourish the skin. Key benefits include:

1. Hydration: Provides long-lasting moisture to dry skin.
2. Softens skin: Improves skin texture and suppleness.
3. Protects: Shields skin from environmental stressors.
4. Soothes: Calms irritated or inflamed skin.

Moisture creams can be used for various skin types and concerns, such as dry skin, sensitive skin, or anti-aging. They often contain ingredients like humectants, emollients, and occlusives to lock in moisture and support skin health.

II. LITERATURE REVIEW

Nadzirah Jamil et al:2018:Extreme environmental conditions will consequently become a disturbance on all phases of plant growth. Malaysia is one of the developing countries that face challenges of extreme environmental conditions

Copyright to IJAR SCT
www.ijarsct.co.in



DOI: 10.48175/568



374

from climate change such as water availability and soil salinity. In response to global climate change, plants are trying to survive through several adaptation mechanisms. *Clitoria ternatea* or also known as Butterfly pea flower is a potential plant that can tolerate different environmental parameters. Besides, *C. ternatea* contains essential phytochemical compounds for pharmaceuticals, textile, medicinal and food industries. *C. ternatea* is originated from tropical Asia countries and it is widely available in the Asian region. Butterfly pea flower has attractive petal colours due to the presence of its bioactive compounds.

Apurva k Shelat et al; 2024: Moisturizers are one of the most used preparations in cosmetics and have been extensively used to soften the skin for consumers. Herbal cosmetics cream is the formulation that are used to protect and nurture a person's look. A semi-solid product for enhancing skin tone is a moisturizing cream. Butterfly pea flower moisturizer is a skincare product infused with extracts from the *Clitoria ternatea* (butterfly pea) flower. Known for its rich antioxidants, including anthocyanins, flavonoids, and peptides, it helps hydrate, soothe, and protect the skin.

Ulfa Ade Maria et al; 2024: The antioxidant action of Butterfly pea flower (*Clitoria ternatea* L.) is believed to be attributed to its flavonoids, alkaloids and polyphenols components. These chemicals function as antioxidants, effectively neutralising free radicals and providing protection against skin damage caused by UV radiation. The objective of this study was to ascertain the IC₅₀ value of butterfly pea extract and thereafter to evaluate the degree of customer preference and convenience towards pharmaceutical items. This study utilised ultrasound-assisted extraction with a solvent technique employing 96% ethanol to generate extracts. These extracts were then compounded into several topical formulations including cream, gel and face spray. Initial assessments were conducted on all compositions. Encompassing organoleptic, homogeneity, pH, viscosity, specific gravity, adhesion, spreadability, wetness and irritation.

Maskur Muhammad et al; 2023: This study also incorporated acceptance and customer preference as factors. The antioxidant activity of BPF extract was determined using the 2,2-diphenyl-1-picrylhydrazyl (DPPH) technique by estimating the IC₅₀ value. The analysis revealed that the BPF extract had a yield of 38.75%. The IC₅₀ values for the gel, cream and face mist preparations were 97.70, 49.14 and 73.89 ppm respectively. The cream recipe had the highest level of antioxidant activity. The determination of consumer preference has indicated that the majority of consumers favours face mist over other formulations.

III. RESULT

The herbal cream containing aqueous extract of *Clitoria ternatea* flowers was prepared and evaluated on various parameters. All the preparations gave satisfactory results on all the defined parameters and the results are shown in Table 2. From the results of drug content of formulated herbal cream containing aqueous extracts of dried plant material of *Clitoria ternatea* Linn. (Flowers) CTF and different proportion of excipients, it was found that HC5 has maximum drug content in combination therefore, HC5 were evaluated for anti-Candida activity. From the results (Table 3) obtained it was concluded that the PHC (HC5) have optimum and significant anti-candida activity when compared with standard formulation (MCC) and hence, it may be used for the treatment of gynecological disorders (vaginitis). Moreover detailed clinical approaches need to establish for the formulation of safe and effective drugs.

IV. CONCLUSION

Natural resources such as plants have been used during ancient times as traditional medicines. Plants such as *Clitoria ternatea* has recently been reported as a main source of antioxidants due to their phytochemical contents. The use of *Clitoria ternatea* in relation to their bioactive compounds mainly correlates to human health and it could be as an alternative medicine for future generations. With the stress on health issues, researchers or scientists should develop and produce health supplements and boosters using the benefits of secondary metabolites of *Clitoria ternatea*, by extracting the leaf, root and flower parts. serious consideration need to be given to plant under environmental condition to assure their sustainability.



REFERENCES

- [1]. Noor, N. M., Choo, W. K., Yap, L. V., & Mohamed-Hussein, Z. A. (2010). "In Vitro Conservation Malaysian Biodiversity-Achievements, Challenges of and Future Directions" in In Vitro Cellular and Developmental Biology-Plant, Vol. 47. No. 1 pp. 26-36.
- [2]. Cook, B. G., Pengelly, B. C., Brown, S. D., Donnelly, J. L., Eagles, D. A., Franco, M. A., Hanson, J., Mullen, B. F., Partridge, I. J., & Peters, M. (2005). "Tropical Forages: An Interactive Tool" in A Repository of Research Outputs. December 2016, from Agricultural Retrieved 13 [https://cgspace.cgiar.org/handle/10568/49072\(3\)](https://cgspace.cgiar.org/handle/10568/49072(3))
- [3]. Lane, A. (2015). Plant Profile: Butterfly Pea (Clitoria ternatea). Retrieved 12 December 2016, from <http://www.thenational.ae/arts-lifestyle/home-garden/plant-profile-butterfly-pea-clitoria-ternatea>.
- [4]. Mathada, R. V., Jevoor, P. S., & Ravishankar, R. (2012). "Effect of Clitoria ternatea Linn Plant Root Extract on the Hippocampal Area Ca and Pancreas of Juvenile Diabetic Rats- a Preliminary Investigation" in Spatula, Vol 2. No. 1 pp. 9-16.
- [5]. Parimaladevi, B., Boominathan, R., & Mandal S. C. (2003). "Antiinflammatory, Analgesic and Anti-Pyretic Properties of Clitoria ternatea Root" in Fitoterapia, Vol. 7. No.4 pp. 345-349.
- [6]. Gujjar R., Dr.Sharma H., Sharma A., Sharma M., Shreyasi, Vyas G. K. A review on Herbal Cream and some plant using for herbal cream formulation International Journal of Creative Research Thoughts (UCRT) 2023 1;4(11)78.
- [7]. Navindgikar Kamalapurkar k. a. Chzvan P.formulation and evaluation of multipurpose herbal cream Research 2020.1;4(12). International Journal of Current Pharmaceutical
- [8]. Formulation and Evaluation of Herbal Fairness Cream Comprising Hydroalcoholic Extracts of Pleurotusostreatus, Glycyrrhizaglabra and Camellia sinensis by Nirmala Gupta, Aditi Dubey, Pushpa Prasad, Amit Roy. UK Journal of Pharmaceutical and Biosciences, 2015 3(3), 40-45.
- [9]. Formulation and evaluation of herbal body lotion A review by Dip Banerjee, Dr. Sayantan Mukopadaya, Mahitkuma International Journal of Health Sciences 2020 6(52), 13342-13349.
- [10]. Formulation and evaluation of multi purpose herbal cream(2020) by Nikhil Formulation and Evaluation of Herbal Fairness Cream Comprising Hydroalcoholic Extracts of Pleurotusostreatus, Glycyrrhizaglabra and Camellia sinensis by Nirmala Gupta, Aditi Dubey, Pushpa Prasad, Amit Roy. UK Journal of Pharmaceutical and Biosciences, 2015 1:5(3) 40.
- [11]. Formulation and evaluation of herbal body lotion A review by Dip Banerjee, Dr. Sayantan Mukopadaya. Mahitkumar (2022). International Journal of Health Sciences, 2022 1:6(52) 13342.
- [12]. Formulation and evaluation of multi purpose herbal cream by Nikhil Nitin Navindgikar", K. A Kamalapurkar, Prashant S. Chavan. International Journal of Current Pharmaceutical Research ISSN 2020 1:4(4) 0975-7066.
- [13]. Agrawal, P., Deshmukh, S., Ali A., Patil, S., Magdum, C. S., Mohite, S. K., & Nandgude, T. D. (2007). "Wild Flowers as Medicines" in International Journal of Green Pharmacy, 2007 1;5 (1)12.
- [14]. Zhou, B., Yuhua, L., Zhiru, X., Haifang, Y., Shinichiro, H., & Kawabata, S. "Ultraviolet A Specific Induction of Anthocyanin Biosynthesis in The Swollen. Hypocotyls of Turnip (Brassica rapa)" in Journal of Experimental 20071;7(7) 567.
- [15]. Khadatkar, S. N., Manwar, J. V., & Bhajipale, N. S. "In Vitro Anthelmintic Activity of Clitoria ternatea Root Linn" in Pharmacognoxy Magazine 2008 1;4(6)35.

