



Formulation & Evaluation Of Polyherbal Cosmetic Cream Using Cucumber Peels , Aloe & Rose

Pratiksha Chandanshiv*¹ , Sanika Andhale*² , Jitesh Batra*³

^{1, 2} Student , Arihant College Of Pharmacy .

³ Asst.Prof., Arihant College Of Pharmacy

Abstract

People around the world have been using natural products to improve their appearance for as long as humans have existed. In ancient Egypt B.C. There is evidence of the use of cosmetics as far back as 3000 years ago, and the use of cosmetics has become an important part of our daily lives in all cultures. Originally, natural ingredients were used in beauty products; Natural products are back and popular cosmetics are now derived from plants. Herbal products (natural products) have long been used as food and medicine.

Many natural products are used in cosmetics, skin care (such as dryness treatment, eczema and acne treatment), antibiotics, vaccines, anti-aging, hair care products (such as hair extensions, hair dyes), dandruff and dandruff. other scalp issues, skin protection and toiletries. Essential oils are the main components of plants; For example, in the cosmetics industry, natural products that eliminate the side effects of herbal cosmetics such as Amla, Shikakai and Priyangu, which are widely used in skin care, meat and hair care, are used.

Indian women also use natural products like Pterocarpus santalinus L. and Turmeric (skin care), Lawsonia inermis L. It is used together with natural oils such as (hair color), coconut oil, olive oil, shea butter, jojoba oil and essential oils in body fragrances.

Keywords

Cucumber peels , Aloe vera , Rose , Herbal , Cosmetics

Introduction

The appearance and function of the skin is maintained due to the important balance between the water of the stratum corneum and the lipids of the skin.

Additionally, regular use of cosmetics such as soap, detergent, alcohol and hot water removes lipids from the skin. Therefore, the skin becomes dry and loses its elasticity. In these cases, skin beauty products should be used not only for beauty, but also to improve the skin's water and viscoelasticity to maintain the condition of the skin muscle and prevent the skin from drying out. There are many factors such as the type of active ingredients used, their concentration, and the composition of the carrier.

Most commercial face creams contain aloe vera as a humectant. It is claimed to restore skin moisture and viscoelasticity. Therefore, research studies evaluating their effects are needed to control these effects. It is thought that an objective method is necessary to reveal and reveal the mechanism of action of skin-improving drugs.

The equipment used for measuring epidermal water is based on the measurement of skin conductance, capacitance, and impedance. The tools used to measure the (viscoelastic) mechanical strength of skin are based on torsion and the absorption method. By introducing non-human testing tools, the properties of cosmetic and dermatological products can be evaluated objectively, comparisons can be made between results and the detection of subtle changes in skin morphology and function that cannot be detected is possible through sensory means. The aim of research in the cosmetics industry is to make the most of situations and create a better tomorrow.

Cosmetics are products intended for the body. Cream When used as a cosmetic, it has a softening and cleansing effect.

Ayurvedic system of medicine is one of the most important systems that uses herbal plants and extracts to treat and control various diseases in the case of Aloe Vera.

It belongs to the Barbadensis category. Aloe, from the Family - Liliaceae, with 300 species, is a cactus plant that grows easily in hot climates and dry aloe. Cosmetics and some medicines are made from glands in the middle of the aloe vera leaf, called aloe vera gel. Aloe vera gel does not contain anthraquinone. This is responsible for the laxative power of aloe vera. However, all leaf extracts may contain anthraquinones. Aloe vera has 75 active ingredients such as vitamins, enzymes, minerals, sugar, saponins and amino

Nutritional content of cucumber; water (96.4%), protein (0.4%), fat (0.1%), carbohydrates (2.8%), minerals (0.3%), calcium (0.01%), phosphorus (0.03%), iron (1.5 mg/100g) and B vitamins (30 IU/100g). The fruit also contains ascorbic acid and enzymes such as meat proteases, proteolytic enzymes, oxidases, succinate and malate dehydrogenase.

Bioactive compounds Cucurbitacins, Cucurbitacins I thiab II, Cucumber A thiab B, Vitexin, Orientin, Isoranol, 2â³-O- (6â´-(E) - p-coumaroyl)glucoside, apigenin 7-O -(63-O-p-coumaroylglucoside)

Aloe Vera Cosmetic Essentials

Aloe vera has been used since ancient times to treat infections and burns. but, With the development of cosmetics, aloe vera has proven to be a very important ingredient in cosmetics. It is a beautiful plant that contains about 20 types of amino acids, sufficient amounts of calcium, magnesium, sodium and other minerals, enzymes, vitamins, polysaccharides, nitrogen and other elements. The most important uses of aloe vera in beauty It's explained briefly here. . Aloe vera contains vitamins B1, B2, B6, B12, and C, which soothe the skin and provide a pleasant feeling.

Skin Aging

Aloe vera initiates the synthesis of elastin and collagen. These proteins are important for preventing skin aging Acne Aloe vera acts as an immune system and anti-inflammatory, and helps to remove acne scars.

Beauty products such as aloe vera can reduce the occurrence of acne. It is also made with medicinal ingredients that protect the skin and fight acne. leadership Aloe vera adds freshness. Helps improve blood distribution Supply nutrients through oxygen exchange between cells sunburn aloe vera It has another role in reducing heat. damaged. To do this, apply it directly to your skin. You can use sunscreen containing the fresh sap of the plant or aloe vera as a sunscreen.

Aloe vera can be used to moisturize and moisturize the skin. There are many products on the market that



contain aloe vera that you can use to soften your skin after showering. Aloe vera gel, cream or lotion for the face creates a delicious layer. Helps protect your skin from dust and other natural substances that can damage your skin.

Pigmentation

Melanin is the color of the body. Human skin color. Hyperpigmentation is a condition in which too much melanin is produced. This is usually caused by overexposure of the skin to the sun. In response to the sun's ultraviolet rays, skin cells called melanocytes begin to synthesize melanin. Increased melanin synthesis causes dark spots to appear on the skin.

Aloe vera has the ability to reduce pigmentation and dark spots on the face acne on skin.

Cream containing aloe vera

It relieves skin swelling well. Aloe vera gel has been proven to be most effective in treating burns and wounds. In fact, aloe vera's regenerative, antibacterial, and antifungal activities are beneficial for skin rashes. .

Cosmetic value of cucumber peel :



Don't throw away the cucumber peels. There's a lot in it. It is beneficial for your health. Benefits include benefits.

Effect on eye diseases, vitamin A and C deficiency, Constipation and bone and muscle disorders. Cucumber peel is rich in fiber. Minerals such as magnesium, potassium, and silica. Silica is an important ingredient for preservation. Your muscles, bones, and tendons are healthy. it is the same Moisturizes the skin and improves complexion and vision.

Beneficial for your skin: Cucumber peel rejuvenates From inside the skin. Regularly use face masks based on cucumber or grated cucumber.

Effective in reducing signs of skin aging : It is also good for dark circles and pore improvement. stains, etc.

Reverses skin tanning : Cucumber has a mild whitening effect. This will help remove tan from your skin. Just rub it Apply cucumber juice to your face Are you ready to endure harsh UV rays? calm you down Cucumbers due to their cooling properties Tends to calm and refresh you amidst this tingling feeling. heat. Just add water and peels to the infuser. Now you're ready to beat the heat.

Cosmetic value of rose



Roses contain flavonoids, essential oils and other beneficial substances.

It has pharmacological properties such as anti-aging, antioxidant, anti-diabetic, and tumor suppressive.

Rose flowers are used as medicine and food and are effective in treating gynecological diseases, inflammation and pain of carbuncles, bruises and injuries, and diabetes.

The healing effect is also obvious. There is also a good place in the skin care business. Floral resources are abundant and accessible. This article reviews the current research and uses of roses, as well as the growth of the rose industry.

Rose flowers are sweet, warm, fragrant and slightly bitter, seeping into the heart. Nourishes the blood, increases qi, relieves depression, regulates menstruation, reduces swelling and detoxifies.

It can be used to treat blood and liver qi stagnation and treat swelling and pain. It is used for situations such as bruises, menstrual irregularities, and menopause. We discovered that the flowers and Astragalus tea bags can also be used to treat diabetes.

Experimental Methodology

Instruments Used

- Magnetic stirrer
- Brookfield's Viscometer
- Weighing balance
- Heating mantle
- Hot air oven

- Water bath

Apparatus Used

- Beaker 100 ml
- Stirrer
- Glass slides
- Measuring cylinder
- Spatula
- Container
- Funnel/Tripod stand

Chemical Used

- Sodium benzoate
- Glycerine
- Dist. Water
- Zinc oxide
- White soft paraffin
- Bees wax
- Methyl paraben
- Ethanol

Herbs Used

- Aloe vera

Kingdom - Plantae

Family - Asphodelaceae

Genus - Aloe

Species - A. Vera

Synonyms - Aloe barbadensis , Aloe elongata

- Cucumber

Kingdom - Plantae

Family - Cyscrbutales

Genus - Cucumis

Species - C. Sativus

Synonyms - Cucumis sativus

- Rose

Kingdom - Plantae

Family - Rosaceae

Genus - Rosa

Species - Rosa cinnamomea

Synonyms - Bakeria, Chavinia, Crepinia

Material & Methodology

Plant materials:

The proposed study of Aloe vera, rose, Cucumber peel Collected from the local botanical garden.

Extractions of Herbs

Air dried and coarsely dried powder of Aloe vera, rose and cucumber peel. This powder is placed in Soxhlet separately, using petroleum ether and then successively with Ethanol. The extract was then concentrated to dried under reduced pressure and controlled Temperature. Then they were preserved in a Refrigerator.

Cream Formulation:

Oil phase :

1. Add Beeswax and propylene glycol in beaker .
2. Then heat it on water bath for uniform mixing.
3. After few minutes oil phase was ready.

Aqueous Phase :

1. Aloe vera extract and rose extract, cucumber peel extract, Distilled water, white soft paraffin and glycerine, , zinc oxide , Sodium benzoate was added in another beaker.
2. Mixing all the ingredients by heating on a water bath, the aqueous phase was ready.
3. Oil phase were added in aqueous phase .
4. The cream was formulated and passed for evaluation .



Formula :

Sr.No	Ingredient	Quantity
1	Aloe vera	1.5 gm
2	Rose	1.5 gm
3	Cucumber	1.5gm
4	Bees wax	3.2gm
5	White Soft paraffin	9ml
6	Methyl Paraben	0.3 gm
7	Dist. Water	qs
8	Glycerine	5 ml
9	Sodium benzoate	0.1 gm
10	Zinc oxide	0.7 gm

EVALUATION OF CREAM

Physical Evaluation :

Formulated herbal creams was undergo Evaluations by using the physical parameter.

a) **Colour:** The colour of the cream was observed by visual examination.

b) **Odour:** The odour of cream was found to be characteristics.

c) **State:** The state was cream was examined visually.

The cream was solid in state .



d) Consistency: The formulation was examined by rubbing cream on hand manually.

The cream having smooth consistency.



e) pH : pH of prepared herbal cream was measured by using pH paper.

The solution of cream was prepared by using 100 ml of Distilled water and set aside 2h.

pH was determined in three times for solution and the average value was calculated.



f) Spreadability: spread ability of formulated cream was measured by placing sample in between two slides then compressed to uniform thickness by placing a definite weight for defined time. The specified time required to separate the two slides was measured as Spreadability.

Lesser the time taken for separation of two slides results showed better Spreadability.

formula.

Spreadability(S) =

Weight tide to upper slide (W) x Length of glass slide (L)/ Time taken to separate slide (T)



g) Washability: formulation was applied on the skin and then ease extends of washing with water was checked.



h) Non- irritancy test: Herbal cream formulation was evaluated for the non-irritancy test. Preparation shown no redness and irritancy.

Observation of the state was done for 24 hrs

I) Viscosity- Viscosity of cream was done by using Brooke field viscometer at the temp of 25 Degree c.using spindle no, 63.at rpm.



J) Phase separation- The prepared cream was transferred in a suitable wide mouth container.

Set aside for storage the oil phase and aqueous phase separation were visualizing after 24h.

K) After feel : Emolency slipperiness and amount of residue left after the application of the fixed amount of cream was found to be good.



Result

The results are tabulated in following table

Sr.no	Parameter	Result
1	Colour	Pale pink
2	Odour	Characteristics
3	State	Semisolid
4	Consistency	Smooth
5	pH	6.7
6	Spreadability	7.4 gm/cm
7	Washability	Easy washable
8	Non-irritancy test	Non irritant
9	Viscosity	39020
10	Phase separation	No phase separation
11	After feel	Emollient

The present research was the formulation and evaluation of polyherbal cream. The evaluation parameters were coming under results, like the physical evaluation of polyherbal cream, PH of the cream, Spreadability, Washability, non-irritancy test, viscosity and phase separation of the polyherbal cream was shown in above table.

Conclusion

A study to develop and evaluate a multi-herbal cosmetic cream using cucumber peel, aloe vera and rose yielded promising results and demonstrated the potential of natural ingredients in skin care products. The goal of this research is to develop new cosmetic products that take advantage of the unique properties of these plant substances and provide a safe, effective and attractive alternative to conventional cosmetic creams. Known for its high water content and rich supply of antioxidants, vitamins and minerals, cucumber peel has been shown to offer significant benefits for skin hydration, soothing and anti-inflammatory properties.

Aloe vera, widely known for its healing and moisturizing properties, has been contributed to the formulation to improve skin hydration, stimulate collagen production, and have anti-inflammatory and antibacterial properties. Rose, revered for its role in reducing redness and irritation and for its fragrant properties, complements the formula with its soothing and astringent properties. The formulation process involved careful selection of ingredients to ensure optimal concentrations to achieve the desired cosmetic effect. Standard cosmetic formulation procedures were followed in the formulation of Polyherbal Cream with a focus on maintaining product stability and homogeneity. Various physical, chemical and microbiological evaluations were performed to ensure the safety, effectiveness and quality of the final product. The physical evaluation included evaluation of color, odor, texture, spreadability and pH, all of which met acceptable standards for cosmetic creams.

The cream had a pleasant aesthetic appearance, soft texture and pH within the skin-friendly range, ensuring user comfort and compatibility. Chemical analysis focused on determining the presence and concentration of active compounds of cucumber peel, aloe vera, and rose to confirm the safety and efficacy of the formulation. The effectiveness of multiherbal cosmetic creams was further evaluated through in vivo studies in volunteers who used the creams over a period of time. Results show significant improvements in skin hydration, texture, and overall appearance. Participants reported high levels of satisfaction and a noticeable reduction in dryness, irritation and signs of aging. In conclusion, the development and evaluation of a multiherbal cosmetic cream using cucumber peel, aloe vera, and rose successfully demonstrated the potential of these natural ingredients to create beneficial skin care products. This study highlights the importance of integrating traditional botanical knowledge with modern scientific methods to develop innovative cosmetic solutions.

This multiherbal cream not only provides a natural alternative to synthetic products, but also meets the growing consumer demand for safer, more environmentally friendly skin care products. Future studies could investigate the long-term benefits and potential improvements of this formula. Research into the synergistic effects of complementary plants and advanced delivery systems can further optimize the efficacy and utility of complex herbal cosmetics. Overall, this study highlights the value of natural ingredients in the cosmetics industry and paves the way for more sustainable and health-conscious innovations in skin care.

References

1. MV Vishvanathan, Prime Minister Unnikrishnan, Kalsuko Komatsu, Hirotooshi Fushimi. A brief introduction to Ayurvedic treatment and some problems. *Indian Journal of Traditional Knowledge* 2003; 2:159-69.
2. Newell, CA, Anderson, LA, Phillipson, JD. *Herbs. A guide for doctors*. London: Pharmaceutical Press, 1996.
3. Atherton P. Aloe revisited. *Br J Phytotherapy* 1998; 4:176-183.
4. Krishnaveni M, Mirunalini S. Therapeutic potential of Amla (amla): an Ayurvedic miracle. *Journal of Basic Clinical Physiology Pharmacol* 2010; 21:93-105.
5. Patel SS, Goyal RK. *Phyllanthus emblica* Geart: A comprehensive review of photochemistry, pharmacology, and ethnomedical uses. *Journal of Plant Research* 2012;6:6-16
6. Chandrashekhar B. Badwaik, Mr. Sharad Manapure, Dr. Suhas Padmane, MD. Sheelpriya Walde. Evaluation of in vitro antimicrobial activity of Teff WORLD. *Journal of Pharmacy and Pharmaceutical Science* 2021;
7. Chandrashekhar Bhojraj Badwaik, MD. Suhas padmane, Dr. Sheelpriya Walde, Ms. SharadManapure. Natural products in cancer treatment. *International Journal of Advances in Engineering and Management (IJAEM)*.2021;3(4):605-607.
8. Chandrashekhar B. Badwaik*, Updesh B.Lade, Prachi Barsagade, Santosh N. Gotford. Madhuri S. Nandgaye, A Review of the Pathophysiology, Etiology and Treatment of Gout Attacks. *Journal of Emerging Technologies and Innovation Research (JETIR)*.2022;9(1):d688-d694
9. Sheila John, Priyadarshini S, Sarah Jane, Monica, Sivaraj C, Arumugam P. In vitro Antioxidants and antimicrobial agents properties of *Dib teva* extract. *International Journal of Pharmaceutical Research*. 2018, 9(1):56-60. 24(6):539-551
10. Said, A., Said, H., Muhammed, A. (1996). Treatment of psoriasis with aloe vera extract in hydrophilic cream: a placebo-controlled, double-blind study. *Tropical Medicine and International Health*. 1(4):505-509.
11. Talal, A., Feda, M. (2003). Plants used in cosmetics. *Phytotherapy research*. 17(9):987-1000. Glaser, D. (2003).
12. Anti-aging products and cosmetics. *Facial Plastic Surgery*. North American Clinics. 12(3):363-372: I. Fulton, J.E., Jr. (1990).
13. Promote wound healing after dermabrasion by using a durable aloe vera gel polyethylene oxide dressing. *Dermatol Surg Oncol*. 16(5):460–470. Dennis P. (2003).
14. Evaluation of aloe gel gloves for the treatment of dry skin associated with occupational exposure: Materials and epidemiology, *AJIC: American Journal of Infection Control*. 31(1):40-42)
15. Bozi A., Perrin C., Austin S., Arce Vera F. (2007). Quality and authenticity of commercial aloe vera gel powder. *Food Chemistry*. 103(1): 22-30 [17], one.
16. Hermans, M.H.E. (1998). Findings regarding the use of different partial- and full-thickness treatments. *Burn*. 24(6):539-551.
17. Somboonwong J., Thanamitramanee S., Jariyapongskul A., Patumraj S. (2000). Therapeutic effect of aloe vera on skin microcirculation and wound healing in a rat second-degree burn model. *Thai Medical Journal*. 83(3):417-425: I.

18. Rollins, A.V. and Harding, C.R. (2004). Moisturizing and skin barrier function. *Dermatology treatment*. 17(1):43-48.
19. Dal'Belo S.E., Gaspar L.R., Berardo P.M., Campos G.M. (2006). To evaluate the moisturizing effect of cosmetic samples containing different concentrations of aloe vera extract with skin bioengineering technology. *Skin science and technology*. 12(4):241–246.
20. Montgomery, D., Parks, D. (2003). Tattoo: Believe in youth. *Journal of Pediatric Health*. 15(1):14-19.
- Jacobs, G. (2002).
21. Anthocyanins in vegetal tissues: proposed integrated function for photoprotection. *New botanist*. 155(3):349-361.
22. <https://www.herzindagi.com/beauty/how-to/you-can-siv-cucumber-peels-article-105761>
23. Parveen Ruhil, Vivek Kumar, Neha and Minochi. Development and evaluation of herbal medicines used in arthritis research. *Journal of Indian Studies* 2018; 7:356
24. SK Uddandu Saheb, Aduri Prakash Reddy, K Rajitha, B Sravani, B Vanitha. Formulation and evaluation of natural creams containing plant extracts. *World Journal of Medical Sciences* 2018; 7:851-61.

