

Preparation And Evaluation Of Polyherbal Cosmetic Cream By Percolation Method

Sandhya S. Ambhore & Vaishnavi A. Pund (Bpharm final Year)

Ishwar Deshmukh Institute Of Pharmacy, Digras

Unnati T. Rathod (Assistant Professor)

ABSTRACT:

Present research to plan and assess polyherbal restorative cream . Primary reason remembered the for the decency of skin where including the concentrate of normal items like Aloe Vera , Amla and Turmeric. The significance of beautification to the humanity has been known since the pre- memorable time and the longing to look wonderful and solid has been creating in the general public. Aloe Vera, Amla , Turmeric are restorative plants; these plants are utilized generally from antiquated year in the different natural therapeutic framework like Ayurvedic, Homeopathic and Siddha. Aloe vera, Amla and Turmeric have mitigating, radioprotective, diminish redness, skin brightening impacts and sterile action. The present research was focus on the formulation of polyherbal cream and their evaluation by using various evaluation parameters like PH, viscosity, spreadability, washability, non-irritancy test, phase separation.

Keywords: Aloe vera , Amla, Turmeric, Facing cream, Evaluation.

I. INTRODUCTION

Ancient humankind and civilizations had a concept of beauty and cosmetics. Cosmetics are created to control oil production, treat acne, and lessen the appearance of wrinkles. Formulations like skin protection, sunscreen, anti-acne, anti-wrinkle, and anti-aging are created for various skin conditions using a variety of materials either synthetic or natural. The creation of cosmetics involves a variety of properties, such as antibacterial, antiseptic, antiseborrheic, anti-inflammatory, and emollient.

Herbal cosmetics are typically referred to as natural cosmetics. here called products, are formulated, using various cosmetic ingredients allowed to form the base where one or more herbal ingredients are used only to provide defined cosmetic benefits, they should be called "herbal cosmetics". These herbal products boast fewer side effects than those associated with products made with synthetic ingredients. According to market research, the herbal cosmetic industry is a major driver of the herbal trade's upward trend. Herbal products are in high demand globally. The herbal cream is essentially an emulsion made of water and oil. Turmeric, aloe vera, and amla are the organic ingredients picked for the herbal cream based on their unique properties. These ingredients were chosen based on their unique characteristics. One of the most significant systems of medicine that uses herbal extracts and plants to treat and manage various disease states is the Ayurvedic system.

ALOE VERA

Since ancient times, people have known and used the aloe vera plant for its benefits to their health, beauty, and skin. In the field of cosmetology, aloe vera is a natural product that is now frequently used. Originally from the hot, dry Arabian Peninsula, aloe vera is a widespread plant. Today, there are over 400 different species of Aloe plants that are cultivated and grown all over the world. Different aloe vera species produce various leaf types; some are smooth and fleshy, while others have pronounced, white-tipped spines. Despite the widespread use of aloe vera in modern society, this is not a new development. Aloe vera plants have a wide range of nutrients, vitamins, minerals, and enzymes in their leaves, which is what makes it so adaptable and healthy for people. These include:

- Vitamins A, B, C, D and E
- Vitamin B12 (aloe vera is one of only a few plants to contain this nutrient)
- Copper
- Magnesium
- Potassium
- Zinc
- Calcium
- Chromium
- Manganese



Fig No.1 Aloe vera

Benefits of Aloe Vera

1. It treats sunburn

Aloe vera aids in healing sunburn thanks to its potent effects at the skin's epithelial level, a layer of cells that covers the body. It helps the skin recover its moisture and serves as a protective layer. The skin heals more quickly thanks to its nutritional benefits and antioxidant properties.

2. It acts as a moisturizer

Anyone with oily skin will benefit from aloe's moisturizing properties because it prevents the skin from feeling greasy. Aloe vera works as a moisturizer and is great for the face before the application of makeup to prevent skin drying for women who use mineral-based cosmetics. Since aloe vera gel has healing properties, it can be used as an aftershave for men to treat minor cuts from shaving.

3. It treat acne

Acne is a skin condition that develops when your body's pores become blocked with bacteria, toxins, and/or dead cells. Symptoms like blackheads, whiteheads, spots, and even oily skin may start to appear in these areas. Given its antimicrobial properties, aloe vera is frequently used as a facial herbal remedy to aid in the healing of scars and blemishes that may be caused by acne. Two hormones, auxin and gibberellins, are present in aloe vera gel. These two hormones have the ability to heal wounds and have anti-inflammatory properties that lessen skin inflammation. The compound giberellin in aloe vera functions as a growth hormone to promote the development of new cells. It permits the skin to heal quickly and naturally with few scars. Aloe is calming and can help the skin heal more quickly by reducing itchiness, blistering, and skin inflammation.

4. Aloe prefect for skin care

Several nutrients, including glycerin, sodium palmate, sodium carbonate, sodium palm kemelate, and sorbitol, are abundant in aloe vera soap and gel. These are healthy for your skin and nourish it from the inside, giving you skin that glistens with vitality. Aloe vera soap and gel contain large amounts of glycerin, sodium palmate, sodium carbonate, sodium palm kemelate, and sorbitol, among other nutrients. You can have skin that glistens with vitality thanks to these because they are good for your skin and nourish it from the inside.

5. Effect on skin exposure to UV and gamma radiation

Aloe vera gel has been reported to have a protective effect against radiation damage to the skin. Exact role is not known, but following the administration of aloe vera gel, an antioxidant protein, metallothionein, is generated in the skin, which scavenges hydroxyl radicals and prevents suppression of superoxide dismutase and glutathione peroxidase in the skin. It reduces the production and release of skin keratinocyte derived immunosuppressive cytokines such as interleukin-10 (IL-10) and hence prevents UV induced suppression of delayed type hypersensitivity.

Ayurvedic medicine, which combines the therapeutic benefits of food and herbs, has also been using turmeric for centuries. Because of its numerous medicinal benefits, this extraordinary herb has gained attention in the west and throughout the rest of the world. Turmeric's use dates back nearly 4000 years to India's Vedic culture. Ayurveda, Unani, and Siddha medicine are frequently used as natural cures for a variety of illnesses. The rhizomes of *Curcuma longa*, a perennial plant in the ginger family (Zingiberaceae) that produces ovate, pyriform, or oblong rhizomes that are frequently branched and appear brownish-yellow in color, are what are used to make turmeric. In Asian nations including China, Bangladesh, and South East Asia, turmeric, a native of South-East Asia, is used as a food additive (spice), preservative, and coloring agent. It is primarily grown in China, Taiwan, Sri Lanka, Bangladesh, Burma (Myanmar), Nigeria, Australia, the West Indies, Peru, Jamaica, and a few other Caribbean and Latin American nations. The largest producer of turmeric is India, which accounts for about 78% of global production. Turmeric is also the most widely used and exported commodity there. The essential oil (5-8%) produced by steam distilling the rhizomes of turmeric contains the following compounds: α -phellanderene (1%), sabinene (0%), cineol (1%), borneol (0%), zingiberene (25%) and sesquiterpenes (53%) among others. Turmeric is also known as Haridra or Haldi. It contains protein (6.3%), fat (5.1%), minerals (3.5%), carbohydrates (69). Although its ability to preserve food through its antioxidant mechanism, to give colour to food and to add taste to the food is well known, its health promoting effects are less well recognized or appreciated.



Fig No.2 Turmeric

Benefits of Turmeric

1. Protects from sun damage

In an animal experiment conducted in 2009, turmeric extract was applied to skin that had been exposed to low-dose, long-term UV radiation. They discovered that it shielded the skin from UV rays, delayed the appearance of wrinkles, preserved skin elasticity, and diminished the visibility of dark spots. In a study conducted two years later, turmeric extract was combined with a skin cream and applied topically for six weeks. The cream improved the skin's capacity to naturally moisturize itself while also providing sun protection, according to the results. The extract might be used in sunscreen formulas, according to the researchers.

2. Helps to reduce acne

It seems that turmeric has natural oil-controlling abilities. The effectiveness of turmeric extract cream on acne patients was studied in 2013. The volunteers' skin's sebum or oil content was the first thing they measured. Then they divided the group into those who received the turmeric-infused cream and those who did not. In fact, starting in the sixth week of the study, those who used the regular cream had a higher level of skin sebum (more oil production). Those applying the turmeric cream, on the other hand, noticed a decrease in skin oil beginning in the fourth week of use, and that reduction had reached 25% by the end of the study's 10 week duration.

3. Reduces risk of skin cancer

Another justification for adding turmeric to sunscreens is that it has anti-cancer properties. Numerous studies demonstrate that this natural ingredient aids in slowing the growth of cancer cells and even helps to reduce tumors. The tumor volume in control mice grew 2 point 3 times more quickly than in mice given a 15 mg dose of curcumin extract, according to the results. Researchers came to the conclusion that curcumin prevents tumor growth and slows the growth of skin cancer cells. Similar findings from a previous study conducted in 2006 showed that curcumin inhibited the growth and killed melanoma skin cancer cells, the deadliest type of skin cancer.

4. Scabies Treatment

Scabies is a condition caused by microscopic mites that leave a rash in the skin. It was found that a combination of turmeric and neem, a plant native to India, was effective in treating scabies.

AMLA

Amla, also known as Indian gooseberry or amalaki, is one of the most widely used herbs in Indian households. Since ancient times, amla has been well-known for both its therapeutic and health-promoting properties. The Phyllanthaceae family and the Plant Kingdom both include Amla. Amla has five of the six tastes that Ayurveda recognizes. It has a complex flavor that is at once sweet, bitter, salty, sour, and astringent. Amla comes in four main varieties, as follows. Wild Himalayan Amla, Chakaiya, Banarasi, Francis (Hathijhool), and Hathijhool. Amla is unquestionably the most abundant natural source of vitamin C. On average, 445 mg of vitamin C are present per 100 grams of this substance.



Fig No.3 Amla

Amla is a medium-sized deciduous plant that can grow to a height of 1 to 8 meters. Its trunk is slightly curved, and its branches are dispersed throughout the plant. The flowers are greenish yellow, and the bark is gray with reddish-colored hard wood. The fruit has six vertical stripes or furrows and is a light greenish yellow color. It also appears to be quite smooth and hard. The leaves have a lemony scent and are lighter in weight. Hard and weighing in the range of 60 and 70 grams, ripe amla fruit is a fruit. When exposed to the sun or extreme heat, it wraps and splits. The berries are hand-harvested as they ripen in the autumn. The Indian emblic is quite fibrous and has a sour, bitter, and astringent flavor. The fruit is rich in ascorbic acid, or vitamin C, and ellagitannins like emblicanin A (37%) and emblicanin B (33%) as well as punigluconin (12%) and pedunculagin (14%) in high concentrations. Additionally, it contains the polyphenols flavonoids, kaempferol, ellagic acid, and gallic acid as well as punicafolin and phyllanemblinin A. Amla has been used to prevent diseases like osteoporosis, arthritis, and pancreatitis. Additionally, it treats inflammatory conditions, kidney diseases brought on by aging, diabetic problems, and high cholesterol. Amla is used to revitalize the reproductive organs and the digestive system, prolong life, treat stomach constipation, lower fever, purify the blood, ease cough and asthma symptoms, strengthen the heart, improve eyesight, promote hair growth, enliven the body, and sharpen the mind.

Benefits Of Amla

1. Lightens and brightens complexion

Antioxidants and vitamin C are abundant in amla, and both of these nutrients aid in skin and complexion lightening. The juice of amla or its use as a face pack are the best ways to reap its skin-friendly effects.

2. Treats Acne

Acne scar removal is aided by amla. Amla, a natural blood purifier, reduces the occurrence of acne and speeds up skin healing. Gorgeous, glowing skin is preserved and protected. By enhancing the skin's color, it reduces blemishes, fine lines, and wrinkles while keeping the skin youthful. Applying amla paste to injured areas helps treat inflammation and lessen scarring.

3. Reduces Skin Pigmentation

Amla's therapeutic qualities cleanse your skin and aid in lightening skin pigmentation. Your face should be treated to some amla juice before drying. Wipe it off after that using a tiny piece of cotton. Even drinking amla juice can help whiten your skin. It facilitates the fading of skin tans. Leprosy, psoriasis, allergies, and eczema are among the skin conditions that amla also treats.

4. Anti-ageing powerhouse

The fact that amla promotes slower skin aging is among its most important skin health advantages. Amla is useful in preserving the youth of your skin because it is rich in vitamin C. It shields the skin from free radicals' damaging effects thanks to its natural antioxidants. These radical elements damage skin collagen, which results in blemishes, wrinkles, fine lines, dark spots, etc. On the skin. Daily amla consumption can delay the onset of aging and give you soft, supple skin.

II. MATERIAL AND METHODS

Plant materials:

The proposed research on Aloe vera, Amla, and turmeric Collected in the neighbourhood.

Preparation of extract : (Percolation process)

- A properly powdered form of organized aloe vera medicine.
- In a separate vessel, uniformly moisten the powdered aloe vera drugs with menstruum for 4 hours (Imbibition). The percolator was packed evenly.
- To prevent disturbing the top layers of drugs, a piece of filter paper is placed on the surface, followed by a layer of clean sand.
- Menstruum is slowly and uniformly poured over the medication to completely saturate it, while leaving the bottom tap open to allow any trapped gas to escape.
- Menstrual fluid is also added in sufficient quantities to maintain a thin layer above the medication, which is then left to stand for 24 hours.
- After maceration, the outlet is opened and the solvent is percolated at a controlled rate while continuously adding fresh volume. The finished product is collected to a volume of 75%.
- Marc is pressed, and the liquid from the pressed marc is added to the percolate, making up 80% to 90% of the total volume.
- Calculated amounts of fresh menstrual blood are added to the volume to adjust it. Utilizing the appropriate methods and equipment, evaporation and concentration are used to produce finished goods.
 - ❖ The extraction of amla and turmeric takes place in the same step.



Fig.No.4 Percolator



Fig No .5. Extraction Amla, Aloe Vera, Turmeric

Cream Formulation:

In the first beaker, beeswax and propylene glycol were added. For even mixing, heat on a water bath next. Oil phase formed after a short while. The second beaker contained the following ingredients: zinc oxide, aloe vera, amla, turmeric, distilled water, white soft paraffin and glycerine, and sodium benzoate. The aqueous phase was created by combining all the ingredients and heating them on a water bath. A semisolid mass was created after the oil phase was continuously stirred into the aqueous phase.



Fig.No .6 Polyherbal Cream

SR NO	INGREDIENTS	QUNTITY
1.	Aloe vera	2gm
2.	Amla	1.5gm
3.	Turmeric	1gm
4.	Bees wax	3.2gm
5.	Methyl paraben	9ml
6.	White soft paraffin	0.5gm
7.	Distilled water	q.s
8.	Menthol	0.2ml
9.	Glycerine	1ml
10.	Propylene glycol	1ml
11.	Zinc oxide	0.7ml
12.	Sodium benzoate	0.1 gm
13.	Smelling agent	1 drop

Table no.1 Formula of cream formulation

III. EVALUATION OF CREAM

Physical Evaluation

The physical parameters of color, odor, consistency, and formulation state were also used to further evaluate the formulation of herbal creams.

A) **Colour:** The cream's color was determined by visual inspection. The outcome is displayed in table 2.

B) **Odour:** Cream has a smelly odour, it was discovered.

C) **State:** The state of the cream was visually examined. The state of the cream was Semi-solid, as shown in table 2.

D) **Consistency:** By manually rubbing cream on the hand, the formulation was tested. Smoothness of the cream's texture.

E) **Ph:** Using a digital ph meter, the ph of the prepared herbal cream was determined. A 100 ml solution of distilled water was used to prepare the cream, and it was left to sit for two hours. Ph was Calculated the average value after being determined three times for the solution. Table 2 displays the findings.

F) **Spredability:** The spreadability of the cream formulation was evaluated by inserting a sample. Between two slides, which was then compressed to a uniform thickness by applying a specific weight for a specific amount of time. Spredability was calculated as the amount of time needed to separate the two slides. Better Spredability was demonstrated by the results of the separation of two slides in less time. The following formula was used to determine spredability. The outcome is shown in table 2.

G) **Washability:** After applying the formulation to the skin, the ease of water washing was assessed. Table 2 displays the outcomes.

H) **Non-irritancy test:** Herbal cream formulation was evaluated for the non-irritancy test. Preparation exhibited no redness or irritability. The results of the 24 hours of state observation are shown in table 2.

I) **Viscosity:** At a temperature of 25 degrees Celsius, the viscosity of cream was measured using a Brooke field viscometer. 63 .S per minute on spindle no. Table 2 displays the results.

J) **Phase sepration:** A suitable wide mouth container was used to transfer the prepared cream into. Set After 24 hours, the oil phase and aqueous phase separated for storage. The results were displayed in table no. 2.

K) **After feel:** Emoliency, slipperiness, and amount of leftover residue after applying the fix. A good amount of cream was discovered. Table 2's observation is displayed.

Table 2:Results of polyherbal cream

SR.NO	Parameter	Results
1	Colour	Yellowish
2	Odour	Smelling
3	State	Semisolid
4	Consistency	Smooth
5	Ph	6.7
6	Spredability	7.4g.cm/cm
7	Washability	Easy washable
8	Non-irritancy	No-irritant
9	Phase separation	No-phase separation
10	After feel	Emollient
11	Viscosity	39015

IV . RESULT

Actual assessment boundaries include things like the tone being yellowish, the scent being strong, the consistency being smooth, and the state being semisolid. The cream's PH was 6.5, spreadability was 7.8g . Cm/sec, launderability was effectively launderable, it wasn't irritant, and the planned cream's consistency was 39010 cps. There was also no stage detachment during the capacity of the polyherbal cream.

V. CONCLUSION

This cream detailing was used to lessen UV-induced skin coloration and skin brightening.

VI. REFERENCES

1. Mali AS, Karekar P, Yadav AV. Formulation and evaluation of multipurpose herbal cream. *Int J Sci Res.* 2015; 4(11): 1495-1497
2. Ashwini S Dhase, Somishwar S Khadbadi, Shweta S Saboo. Formulation and evaluation of vanishing herbal cream of crude drugs. *Am J Ethnomed* 2014;1:313-8.
3. Jadhav Santosh, Patil Manojkumar. A review on: nyctanthes arbor-tristis linn. Rejuvenating herbs. *Int J Res Pharm Pharm Sci* 2016;1:54-62.
4. PRASHANT CHAVAN1*, MALLINATH KALSHETTI1, NIKHIL NAVINDGIKAR2. Formulation and evaluation of polyherbal cream. *Int J Sci Res.*
5. Somnath S Davkhar* , Aarti S Bhandari, Sanjivani A Akolkar. Formulation and evaluation of Multipurpose Herbal Cream.
6. MV Vishvanathan, PM Unnikrishnan, Kalsuko Komatsu, Hirotoshi Fushimi. A brief introduction to Ayurvedic system of medicine and some of its problems. *Indian J Traditional Knowledge* 2003;2:159-69.
7. Christaki EV, Florou-Paneri PC. Aloe vera: A plant for many uses. *J Food Agric Environ.* 2010; 8(2): 245-249.
8. Bhowmik D, Chiranjib YJ, Tripathi KK, Kumar KS. Herbal remedies of Azadirachta indica and its medicinal application. *J Chem Pharm Res.* 2010; 2(1): 62-72
9. Jalal Bayati Zadeh, Nasroallah Moradi Kor. Physiological and pharmaceutical effects of ginger (*Zingiber officinale roscoe*) as a valuable medicinal plant. *Eur J Exp Biol* 2014;4:87-90.
10. Parveen Ruhil, Vivek Kumar, Neha Minochi. Formulation and evaluation of herbal cream used in the treatment of arthritis research. *Indian J Res* 2018;7:356-7.