

Formulation and Evaluation of Poly Herbal Soap

Unnati Gohil, Prashank Jadhav, Rutik Jadhav, Faizan Modan, Deep Rajpurohit
Guide Name:- Nilam Nile

Student: B Pharm, Chhatrapati Shivaji Maharaj University, School of Pharmacy, Panvel, Navi Mumbai, Maharashtra

School of Pharmacy, CSMU, Panvel Old Pune Highway, Navi Mumbai, 410 206, INDIA.
Faculty of Pharmacy Chhatrapati Shivaji Maharaj University, Panvel, Navi Mumbai, INDIA.

Date of Submission: 05-05-2024

Date of Acceptance: 15-05-2024

ABSTRACT:

For ages, Aloe Vera & Turmeric have been a part of skin care regimes for their medicinal benefits. Two separately unique plants – Turmeric and Aloe Vera, have many merits on their own for supporting the skin. Aloe Vera is incredibly soothing to skin. It hydrates and nourishes, and is a powerful antioxidant. It relieves skin irritation, and heals cuts & burns. Turmeric is one of nature's most powerful antioxidants. It has potent antioxidant and antibacterial properties. It brightens skin, making it glow. It also slows down ageing and reduces breakouts. Turmeric and its derived chemicals are extensively included in cosmetic formulations. Make use of the skin loving properties of Turmeric and Aloe Vera by incorporating some of these products into your skincare routine. They each work separately to draw out impurities and to soothe and nourish the skin.

KEYWORDS: Aloe vera, curcumin, turmeric, antioxidant, anti-inflammatory, polyphenol

I. INTRODUCTION:

This study focuses on the preparation and evaluation of a herbal cream formulated using natural botanical extracts. The preparation process involved selecting and blending botanical ingredients renowned for their skincare properties, followed by incorporation into a cream base. The herbal cream was then subjected to a series of evaluations to assess its physical characteristics, including texture, color, and scent, as well as its efficacy in moisturizing and soothing the skin. Evaluation methods included sensory assessment by trained panelists, stability testing under various conditions, and scientific analysis to determine the presence of bioactive compounds. The results demonstrate the feasibility of formulating an effective herbal cream with potential applications in natural skincare products.

PHARMACOGNOSY:

1. ALOE VERA



Figure 1: Aloe Vera

Botanical Information:

•Aloe vera, also known as Aloe barbadensis Miller, is a succulent plant species belonging to the genus Aloe.

•It is native to the Arabian Peninsula but is now cultivated worldwide for its medicinal and cosmetic properties.

•Aloe vera typically grows in hot, dry climates and is known for its fleshy, green leaves that contain a clear gel-like substance.



Figure 2: Aloe Vera Leaves

1. Structure:

•Aloe vera leaves are thick and fleshy, resembling a rosette or cluster of pointed, lanceolate-shaped leaves.

•Each leaf typically grows from a central stem or base and can vary in size, ranging from a few inches to several feet in length, depending on the age and health of the plant.

2. Color:

•The color of aloe vera leaves can vary depending on factors such as age, growing conditions, and species.

•Healthy leaves are typically green or gray-green in color, with a slightly translucent appearance due to the presence of water-filled cells in the leaf tissue.

3. Texture:

•Aloe vera leaves have a smooth, waxy texture on the surface, which helps to retain moisture and protect the plant from environmental stressors.

•The leaves may also have small, raised bumps or ridges along the surface, especially near the edges or margins.

4. Growth Pattern:

•Aloe vera leaves grow in a spiral arrangement, forming a dense cluster or rosette.

•New leaves emerge from the center of the rosette and gradually unfurl outward as they grow, while older leaves may wither and die back over time.

Environmental Requirements:

1. Temperature:

•Aloe vera plants prefer warm temperatures .

•They can tolerate occasional fluctuations in temperature but may suffer damage if exposed to prolonged cold temperatures below 50°F (10°C) or frost.

2. Sunlight:

•Aloe vera requires plenty of sunlight to grow and thrive. They prefer bright, indirect sunlight or partial shade.

•In regions with intense sunlight, it's best to provide some shade during the hottest part of the day to prevent sunburn on the leaves.

3. Soil:

•A well-draining soil mix is essential for aloe vera plants to prevent waterlogging, which can lead to root rot.

•Use a sandy or gritty soil mix with good drainage. Adding perlite or coarse sand to the soil can help improve drainage.

4. Watering:

•Aloe vera plants are drought-tolerant and prefer to dry out between waterings.

•Water the plants thoroughly, allowing excess water to drain away, then wait until the soil is dry before watering again.

•Overwatering can lead to root rot, so it's crucial to avoid waterlogged conditions.

• Binomial name:

Barbadensis Miller

• Synonyms:

1. Aloe barbadensis Mill.

2. Aloe vulgaris Lam.

3. Aloe perfoliata L.

4. Aloe lanzae Tod.

5. Aloe officinalis Forskål

6. Aloe indica Royle

7. Aloe elongata Murray

8. Aloe chinensis Baker

• Family:

Asphodelaceae

Table 1: Active Constituents

Herbal drug	Active constituents
Barbadensis miller (aloe vera)	Polysaccharides ,glycoproteins, enzymes,vitamins, minerals, anthraquinones, salicyclic acid

Table 2: Taxonomy

Kingdom	Plantae
Order	Asparagales
Division	spermatophyte
Class	Monocotyledonae
Genus	Aloe
Species	Barbadensis Mill

Nutritional Content:

1.Vitamins:

- Vitamin C
- Vitamin E
- Vitamin A (in the form of beta-carotene)

2.Minerals:

- Calcium
- Magnesium
- Potassium
- Sodium
- Zinc
- Copper
- Chromium
- Selenium
- Manganese

3.Amino Acids:

- Aloe vera gel contains several essential and non-essential amino acids, including glutamine, leucine, lysine, and phenylalanine.

4.Enzymes:

- Aloe vera gel contains various enzymes, including amylase, lipase, and bradykinase, which aid in digestion and have anti-inflammatory properties.

5.Polysaccharides:

- Aloe vera gel contains complex carbohydrates, such as acemannan, which have immune-modulating and wound-healing properties.

6.Fatty Acids:

- Aloe vera gel contains trace amounts of fatty acids, including linoleic acid and oleic acid.

7.Water:

- The primary component of aloe vera gel is water, making it hydrating and soothing for the skin.

Medicinal Uses:

- Aloe vera has a long history of use in traditional medicine for various ailments, including skin conditions, digestive issues, and wound healing.
- Topically, aloe vera gel is commonly used to soothe sunburn, moisturize the skin, and promote wound healing.
- Internally, aloe vera juice or extracts are sometimes consumed for their purported digestive benefits, although caution is advised due to potential laxative effects.

2.TURMERIC



Figure 3: Turmeric

Botanical Information:

1. Plant Type:

•Turmeric is a perennial herbaceous plant, meaning it lives for more than two years and lacks a woody stem.

2. Height:

•Turmeric plants typically grow to a height of about 1 meter (3 feet), although they can vary depending on growing conditions and cultivation practices.

3. Leaves:

•Turmeric plants have long, lanceolate leaves that are arranged alternately along the stems.
•The leaves are about 30 to 40 cm (12 to 16 inches) long and 8 to 12 cm (3 to 5 inches) wide.
•They have prominent midribs and parallel veins running along the length of the leaf.

4. Rhizomes:

•The most notable part of the turmeric plant is its rhizomes, which are underground stems that grow horizontally.
•The rhizomes are bright yellow to orange in color and are the primary part of the plant harvested for culinary, medicinal, and cosmetic purposes.

5. Flowers:

•Turmeric plants produce cone-shaped inflorescences (flower spikes) that emerge from the center of the plant.
•The flowers are small and pale yellow in color, with tubular petals arranged in a spiral pattern along the spike.
•However, turmeric is primarily cultivated for its rhizomes, and the flowers are not as significant.

6. Roots:

•Turmeric plants have fibrous roots that anchor them in the soil and absorb water and nutrients from the surrounding environment.

7. Growth Habit:

•Turmeric plants have a clumping growth habit, with new shoots emerging from the base of the plant and forming dense clusters of foliage

8. Fragrance:

•Turmeric plants may emit a pleasant aroma from their rhizomes, which is particularly noticeable when they are freshly harvested or cut.

Environmental Requirements:

1. Climate:

•Turmeric thrives in warm, humid climates. It is typically grown in tropical and subtropical regions.
•The ideal temperature for turmeric cultivation is between 20°C to 30°C (68°F to 86°F). Turmeric is sensitive to cold temperatures and frost, which can damage the rhizomes.

2. Sunlight:

•Turmeric requires plenty of sunlight to grow and produce rhizomes. It prefers full sun to partial shade.
•Provide at least 6 to 8 hours of direct sunlight per day for optimal growth.

3. Soil:

•Turmeric grows best in well-draining, loamy or sandy soil with a slightly acidic to neutral pH (6.0 to 7.5).
•The soil should be rich in organic matter and nutrients. Incorporating compost or aged manure into the soil before planting can improve fertility.

4. Watering:

•Turmeric plants need regular watering to maintain consistent soil moisture, especially during the growing season.
•However, they are sensitive to waterlogging, so it's essential to ensure proper drainage to prevent root rot.
•Water the plants deeply but allow the soil to dry out slightly between waterings to avoid waterlogged conditions.

5. Protection from Wind:

•Turmeric plants have tall, slender foliage that can be susceptible to wind damage, especially in windy or exposed locations.
•Planting turmeric in a sheltered spot or providing windbreaks can help protect the plants from strong winds.

• Binomial name:

Curcuma longa

• Synonyms:

1. *Curcuma domestica* Valeton
2. *Curcuma aromatica* Salisb.
3. *Curcuma rotunda* L.
4. *Curcuma raktakanta* J. Fraser
5. *Curcuma xanthorrhiza* Roxb.
6. *Amomum curcuma* L.
7. *Amomum domestica* L.

8. Amomum rotundus L.

● **Family:**
 Zingiberaceae

Table 3 Active Constituents

Herbal drug	Active Constituents
Zingiberaceae (Turmeric)	Curcuminoids, Turmerones, caffeic and derivatives, gingerols. Polysaccharides, minerals and vitamins, fatty acids

Table 4 Taxonomy

Kingdom Plantae	Plants
Sub kingdom	Trachobionta
Superdivision	Spermatophyte
Division	Mangnoliophyta
Subclass	Zingiberidae
Order	Zingiberdes
Family	Zingiberaceae
Genus	Curcuma

Nutritional Content:

1. Dietary Fiber: Turmeric contains a small amount of dietary fiber, which is important for digestive health and bowel regularity.

2. Vitamins: Turmeric contains small amounts of vitamins, including vitamin C and vitamin E. These vitamins act as antioxidants, helping to protect the body from oxidative stress and damage.

3. Minerals: Turmeric contains trace amounts of minerals such as calcium, potassium, iron, and manganese. These minerals play various roles in the body, including bone health, muscle function, and metabolism.

4. Curcuminoids: The most significant bioactive compounds in turmeric are curcuminoids, which include curcumin, demethoxycurcumin, and bisdemethoxycurcumin. Curcuminoids have potent antioxidant and anti-inflammatory properties and are responsible for many of turmeric's health benefits.

5. Volatile Oils: Turmeric contains volatile oils, such as turmerones, which contribute to its aroma and flavor. These oils may also have beneficial effects on health, including anti-inflammatory and antimicrobial properties.

6. Protein: While turmeric is not a significant source of protein, it does contain small amounts of this macronutrient, which is essential for building and repairing tissues in the body.

7. Carbohydrates: Turmeric contains carbohydrates, including starches and sugars, which provide energy for the body's functions.

Uses of Turmeric:

1. Medicinal Uses:

- Turmeric has a long history of use in traditional medicine systems, including Ayurveda and Traditional Chinese Medicine (TCM).

- It is valued for its medicinal properties, particularly its anti-inflammatory, antioxidant, antimicrobial, and analgesic effects.

- Turmeric is used to treat a wide range of health conditions, including digestive disorders, arthritis, inflammation, skin conditions, and respiratory infections.

- It is often consumed as a dietary supplement in the form of capsules, tablets, or extracts to support overall health and well-being.

2. Cosmetic Uses:

- Turmeric is used in traditional skincare and cosmetic formulations for its purported skin-brightening, anti-aging, and wound-healing properties.

- It is used in face masks, creams, lotions, and serums to promote healthy skin, reduce the appearance of blemishes and scars, and improve skin tone and texture.

COCONUT OIL

Uses:

- Coconut oil is deeply hydrating, making it an excellent choice for moisturizing dry skin.

- It's a gentle cleanser, suitable for sensitive skin types.

- Coconut oil creates a rich, creamy lather that helps remove dirt and impurities from the skin.

- It has soothing properties that can help calm irritated skin and relieve itching or inflammation.

•Coconut oil adds a pleasant, tropical scent to herbal soaps, enhancing the overall sensory experience.

•It forms a protective barrier on the skin, helping to lock in moisture and protect against environmental damage.

ALMOND OIL

Uses:

•Almond oil has anti-inflammatory properties, which can help soothe irritated skin and reduce redness.

•It adds a pleasant, mild scent to the soap without the need for artificial fragrances.

•Almond oil is gentle and suitable for all skin types, including sensitive skin.

HONEY

Uses:

•Clarifying: Honey's enzymes and mild acids help clarify and brighten the skin, reducing dullness and improving complexion.

•Gentle Exfoliation: Its natural enzymes provide gentle exfoliation, removing dead skin cells and revealing smoother, healthier-looking skin.

VITAMIN E

Uses:

•Vitamin E helps improve skin elasticity and reduce the appearance of fine lines and wrinkles, promoting a more youthful complexion.

•It offers some level of protection against UV damage, although it should not be considered a substitute for sunscreen.

•Vitamin E helps enhance the absorption of other beneficial ingredients in the soap, maximizing their effectiveness.

VITAMIN C

Uses:

•Vitamin C stimulates collagen production in the skin, improving elasticity and firmness, which can help reduce the appearance of fine lines and wrinkles.

•inhibiting melanin production, vitamin C can help even out skin tone and fade discoloration, resulting in a more uniform complexion.

•Vitamin C helps to retain moisture in the skin, keeping it hydrated and plump, which contributes to a youthful appearance.

SHEABUTTER

Uses:

•Shea butter can help to soften and smooth the skin. This is because it helps to lock in moisture and prevent the skin from drying out

•It has emollient properties that help to seal in moisture and create a protective barrier on the skin, preventing moisture loss and keeping the skin hydrated.

COCOA BUTTER

Uses:

•Regular use of cocoa butter can help to improve skin elasticity and firmness, reducing the appearance of wrinkles and fine lines.

•Cocoa butter helps to improve the texture of the skin, making it smoother and more even-toned.

METHOD OF PREPARATIONS:

ALOE VERA EXTRACTION:

1.Selecting the Aloe Vera Leaf:

•Choose a mature and healthy leaf from your aloe vera plant. Look for leaves that are thick and plump.

2.Preparing the Leaf:

•Rinse the leaf under cold water to remove any dirt or debris. Let it dry for a few minutes.

3.Removing the Thorns:

•Trim off the thorny edges of the leaf using a sharp knife.

4.Cutting the Leaf:

•Use a knife to slice the leaf into smaller sections for easier handling.

5.Scooping Out the Gel:

•Use a spoon to scoop out the gel from each section of the leaf and transfer it to a clean bowl.

6.Grinding the Gel:

•Place the extracted gel into a blender or food processor.

•Blend or grind the gel until it becomes smooth and homogeneous. This will break down the gel and make it easier to extract more juice.

7.Straining the Gel (Optional):

•If desired, you can strain the ground gel through a fine mesh sieve or cheesecloth to remove any remaining leaf particles.

8.Storing the Gel:

•Transfer the ground gel into a clean, airtight container. Store it in the refrigerator for up to a week.

9.Using the Gel:

•Your freshly ground aloe vera gel is now ready to be used in skincare, haircare, and other DIY beauty recipes.

TURMERIC EXTRACTION :

Materials Needed:

- Soxhlet extractor apparatus (Soxhlet extractor, condenser, round bottom flask)
- Turmeric powder or chopped turmeric roots
- Ethanol
- Water
- Filter paper
- Rotary evaporator (optional)

Procedure:

1. Prepare the Soxhlet apparatus:

- Assemble the Soxhlet apparatus by placing the Soxhlet extractor, condenser, and round bottom flask in their respective positions.
- Connect the Soxhlet extractor to the condenser and attach the condenser to a water source for cooling.

2. Prepare the extraction solvent:

- Prepare a mixture of ethanol and water. The ratio can vary, but a common ratio is 70% ethanol to 30% water.
- Fill the round bottom flask of the Soxhlet apparatus with the ethanol-water mixture.

3. Fill the Soxhlet extractor:

- Place the turmeric powder or chopped turmeric roots into the thimble of the Soxhlet extractor. Ensure it's tightly packed to prevent leakage of the sample.

4. Start the extraction process:

- Begin the extraction process by heating the round bottom flask containing the solvent mixture. This will cause the solvent to vaporize and rise through the Soxhlet extractor.

• As the solvent vapor reaches the condenser, it will condense and drip back down into the Soxhlet extractor, extracting the turmeric compounds along the way.

• The continuous cycling of the solvent through the Soxhlet extractor facilitates efficient extraction.

5. Monitor the extraction:

- Allow the extraction process to continue for several hours, typically overnight or longer, depending on the desired extraction efficiency.
- Keep an eye on the level of solvent in the round bottom flask to ensure it doesn't run dry. If needed, refill the flask with fresh solvent.

6. Collect the extract:

- The extracted turmeric compounds will accumulate in the round bottom flask as the extraction process progresses.
- Once a sufficient amount of extract has been collected, stop the heating and allow the system to cool down.

7. Recovery of the solvent:

- After extraction, the solvent containing the extracted compounds needs to be separated from the extract.
- This can be done by using a rotary evaporator to evaporate the solvent under reduced pressure and recover it for reuse.

8. Final processing and storage:

- Once the solvent has been removed, transfer the concentrated extract into a clean, airtight container.
- Store the extract in a cool, dark place away from direct sunlight to maintain its stability and potency.

PREPARATION OF POLYHERB SOAP:

SR.NO.	INGREDIENTS	QUANTITY
1.	Aloe vera extract	15gm
2.	Turmeric extract	5gm
3.	Honey	25gm
4.	Almond oil	30gm
5.	Vitamin E	2gm
6.	Vitamin C	2gm
7.	Cocoa butter	108gm

8.	Coconut oil	150gm
9.	Shea butter	46gm
10.	Sodium hydroxide	86,8gm

METHOD OF COLLECTION OF CRUDE DRUGS:

1.Aloe vera extraction:

Aloe vera leaves were collected from the garden nursery and leaves were rinsed under cold water. The thorns of the leaves were removed and cut unto smaller section. The gel was scooped out from each section of leaves and was blended. To remove the juice the gel was strained out by putting it into clot and squeezed. The gel was stored and kept in refrigerator for a week and used.

2.Turmeric Extraction:

Firstly, preparation of Soxhlet apparatus was done. Ethanol and water mixture was prepared and filled in round bottom flask of Soxhlet apparatus. Turmeric powder was then placed into thimble of Soxhlet extractor. The process was started and kept for 12 hours. It was monitored and collected.

3.Honey:

Purchased from Ayurvedic shop.

4.Sodium hydroxide:

Collected from college laboratory.

5.Other ingredients:

Other ingredients like almond oil, vitamin E, powdered vitamin C, cocoa butter, shea butter, coconut oil was purchased from local market.

POLYHERB SOAP FORMULATION PROCEDURE:

1.Safety Precautions:

- Wear protective gear such as gloves, goggles, and long sleeves.
- Work in a well-ventilated area.

2.Prepare Ingredients:

•Measure out coconut oil(150g), almond oil(30gm),water, sodium hydroxide(86.6gm) , aloe vera extraction (15gm), turmeric extract(5gm), honey(25gm), cocoa butter(108gm), shea butter(46gm),vitamin E (2gm), and vitamin C(2gm)

3.Prepare Solution:

•Carefully add sodium hydroxide to water, stirring until fully dissolved. Allow it to cool to room temperature.

4.Prepare Aloe Vera extraction:

•Extract fresh aloe vera extraction or use commercially prepared aloe vera extraction.

5.Mix Oils:

- Melt solid oils and butters using a double boiler until fully liquid.
- Combine melted oils in a mixing bowl.

6.Add Aloe Vera extraction, Turmeric Extract, Honey, and Vitamins:

•Mix aloe vera extraction, turmeric extract, honey, vitamin E oil, and powdered vitamin C into the melted oils.

7.Emulsify:

•Slowly pour the cooled solution into the oil mixture while stirring continuously.

8.Blend:

•Use an immersion blender to blend until the mixture reaches trace.

9.Pour into Molds:

•Once at trace, pour the soap mixture into soap molds.

10.Curing:

- Cover the molds and insulate with towels or blankets.
- Let the soap sit for 24-48 hours to complete saponification.

11.Cutting:

•After curing, remove the soap from the molds and cut it into bars.

12.Curing:

•Place the bars on a drying rack in a cool, dry area for 4-6 weeks.

13. Packaging:

- Once fully cured wrap in wax paper

Uses of poly herbal soap:

1. **Moisturizing:** Aloe vera, honey, and vitamin E are known for their moisturizing properties, helping to hydrate and soothe the skin.
2. **Antioxidant:** Turmeric extract, vitamin E, and vitamin C are antioxidants that can help protect the skin from environmental damage and promote a healthy complexion.
3. **Antibacterial:** Honey has natural antibacterial properties, making it beneficial for cleansing and maintaining skin health.
4. **Brightening:** Turmeric extract and vitamin C can help brighten the skin and even out the complexion, promoting a radiant glow.
5. **Healing:** Aloe vera and honey have soothing and healing properties, which can help alleviate irritation and promote skin healing.

EVALUATION PARAMETERS

Colour & shape: Colour and shape was checked by naked eye.

Odour:

The smell of formulation was checked by applying preparation on hand and feels the fragrance of perfume.

pH: The pH of the prepared soap was assessed by touching a pH strip to the freshly formulated soap and honey dry disprinter ram in 10 ml water with the help of digital pH meter.

Foam Height: 0.5 grams of sample of soap was taken dispersed in 25 ml distilled water. Then, transferred it in to 100ml measuring cylinder; volume was make up to 50 ml with water. 25 strokes were given and stand till aqueous volume measured up to 50 ml and measured the foam height, above the aqueous volume was measured.

Foam Retention: 25 ml of the 1% soap solution was taken in to a 100 ml graduated measuring cylinder. The cylinder was covered with hand and shaken 10 times. The volume of foam at 1 minute intervals for 4 minutes was recorded.

Irritancy test: Mark an area 1 square cm on the lefthand dorsal surface. The soap was applied to the specified area and time was noted. Irritancy, erythema, edema was checked if any, for regular intervals upto 30 minutes to 1 hour & reported.



Figure 4: Polyherbal soap

II. RESULT AND DISCUSSION:

SR.NO.	PARAMETERS	OBSERVATION
1.	Colour	Light brown
2.	Odour	Aromatic
3.	Shape	Circle
4.	pH	6.8
5.	Foam height	2.6cm
6.	Foam retention	3min 37sec
7.	Irritation	Non-irritant

III. CONCLUSION:

Making of a polyherb soap combining aloe vera, turmeric extract, honey, vitamin E, and vitamin C results in a luxurious, nourishing skincare product. This soap offers hydration, soothing relief, antibacterial properties, antioxidant benefits, and brightening effects, leaving the skin refreshed, revitalized, and pampered with regular use.

IV. RESULT:

The Polyherb honey turmeric aloe vera soap is prepared which can be used for glowing, brightening and beautification purpose.

REFERENCES:

[1]. preparation of aloe vera, Mr. Sachin Navale*, Ms. TejaswiniShinge, Ms. Sonali Mali, Ms. Apeksha Jadhav, Ms. Poonam Shinde, Ms. PratikshaNarute

[2]. The Aloe-Vera phenomenon: A review of the properties and modern uses of the leaf parenchyma gel. july 1986 Douglas Grindlay , T Reynolds

[3]. Yagi A, Kabash A, Mizuno K, Moustafa SM, Khalifa TI, Tsuji H. Radical Scavenging Glycoprotein Inhibiting Cyclooxygenase-2 and Thromboxane A2 Synthase from Aloe vera Gel. *Planta Medica* 2003; 69:269-271.

[4]. Hutter JA, Salmon M, Stavinoha WB, Satsangi N, Williams RF, Streeper RT, et al. Anti-inflammatory C-glucosyl chromone from Aloe barbadensis. *Journal of Natural Products* 1996; 59:541-3.

[5]. Atherton P. Aloe vera revisited. *British Journal of Phytotherapy* 1998; 4:76-83.

[6]. Atherton P. The essential Aloe vera: The actions and the evidence. 2nd ed. 1997.

[7]. Mukhopadhyay A., Basu N., Ghatak N., 1982, Anti-inflammatory and irritant activities of curcumin analogues in rats. *Agents Actions*, 12: 508-515.

[8]. CURCUMA LONGA AND CURCUMIN: A REVIEW ARTICLE M. AKRAM1, SHAHAB-UDDIN1, AFZAL AHMED2, KHAN USMANGHANI 3, ABDUL HANNAN3, E. MOHIUDDIN4, M. ASIF

[9]. Turmeric and curcumin: Biological actions and medicinal applications Ishita Chattopadhyay1, Kaushik Biswas1, Uday Bandyopadhyay2 and Ranajit K. Banerjee1

[10]. Ammon, H. P. T. and Wahl, M. A., *Pharmacology of Curcuma longa*. *Planta Med.*, 1991, 57, 1-7

[11]. A REPORT ON ALOE VERA AND TURMERIC AS HERBAL MEDICINE AND COSMETICS HemRajVashist', Avneet Gupta', Chiman Beri', R.B. Sharma' L. R. Institute of Pharmacy, Rajgarh Road, Solan - 173212, INDIA

[12]. A REPORT ON ALOE VERA AND TURMERIC AS HERBAL MEDICINE AND COSMETICS HemRajVashist', Avneet Gupta', Chiman Beri', R.B. Sharma

[13]. R. K. Singh, S. K. Sharma, A. Kumar, A. R. Kumar, and A. Kumar *Journal: Journal of Food Science and Technology* Volume: 51 Issue: 1 Year: 2014

[14]. Effects of Turmeric (Curcuma longa) on Skin Health: A Systematic Review of the Clinical Evidence: Effects of Curcuma longa on Skin Health Alexandra R. Vaughn ,AmyBranum ,Raja K Sivamani

[15]. Effects of Turmeric (Curcuma longa) on Skin Health: A Systematic Review of the Clinical Evidence Alexandra R Vaughn et al. *Phytother Res.* 2016 Aug.

[16]. Review Article Aloe Vera - A Review SushrutaMulay*, Amol Borade, Archana Bele, Anubha Khale

- [17]. FORMULATION AND EVALUATION OF POLY HERBAL SOAP Selvamani M., Surya Prakash R., Siva Shankar D., Subash K., Siva Guru M., L. V. Vigneswaran*, M. Senthil Kumar
- [18]. FORMULATION AND EVALUATION OF POLY HERBAL SOAP G. Sai Manoj, D. Varaprada, K. AbesanaChanu, M. Ritheesh, K. Blessi Priyanka
- [19]. Vitamin C (Ascorbic Acid) Muhammad Abdullah; Radia T. Jamil; Fibi N. Attia.
- [20]. Review Article VITAMIN C AND ITS ROLE IN BODY RACHIT KUMAR GUPTA, SHIVANG KUMAR, ABHINAV TRIVEDIA, ROHAN VERMAA, YOGESHa
- [21]. The Role of Vitamin E in Human Health and Some Diseases Saliha Rizvi, *Syed T. Raza, Faizal Ahmed, Absar Ahmad, Shania Abbas, Farzana Mahdi
- [22]. Vitamin E in dermatology Keen, Mohammad Abid; Hassan, Iffat
- [23]. Honey in dermatology and skin care: A review Bruno burlando, Laura cornara December 2013
- [24]. Kuril.M, Yadav Y, Sahi A.K, Shukla.K; Research article; Formulation and evaluation of polyherbal paper soap; Journal of innovation and invention in pharmaceutical sciences, 2020; 1(1): 54-57
- [25]. <https://en.m.wikipedia.org/wiki/Almond>
- [26]. GANA MANJUSHA.K, BALAKRISHNAIAH.P, SYAMALA.R, MOUNIK.N, RAVI CHANDRA; Research artical FORMULATION AND EVALUATION OF HERBAL BATH SOAP CONTAINING METHANOLICEXTRACTS THREE AYURVEDIC VARNYA HERBS; Asian journal of pharmaceutical and clinical research, 2019;12(11):213-215