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Preparation Of Alovera Gel

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Abstract—Aloe vera, commonly known as Barbados or Curaçao Aloe, is an herbal medicine with a long tradition of use by a variety of cultures. The succulent plant grows in arid and subtropical climates and is best known for 2 distinct preparations: the clear mucilaginous gel that is widely used for the treatment of minor burns, especially sunburns, and the thick sap of the leaves that turns yellow-brown and has strong laxative effects that caution its use. The traditional uses of the clear mucilaginous gel are manifold, ranging from topical applications to reduce perspiration to oral dosing for diabetes and a range of gastrointestinal ailments. The efficacy of aloe vera gel to treat burn wounds, genital herpes, and seborrheic dermatitis have been shown in clinical trials, but other indications such as psoriasis or internal application for the treatment of type 2 diabetes remain inconclusive. The main limitation of the current clinical knowledge about aloe vera gel is small clinical studies that often lack rigorous methodology. Several clinical trials are being conducted to further evaluate the use of aloe vera gel for a variety of disorders, as well as to further confirm traditional uses of the plant extract.

Keywords: Aloe vera, health and beauty, skin.

INTRODUCTION:

Aloe vera gel is used as an ethnomedicine in Trinidad and Tobago for hypertension. The most common folk use of aloe has been for the treatment of burn wounds and specifically to aid in the healing process, reduce inflammation, and tissue scarring. The gel was described by Dioscorides and used to treat wounds and mouth infections, soothe itching, and cure sores. The use of aloe vera gel as a household remedy in the United States was triggered by reports of its beneficial effect on radiation dermatitis followed by a boom in cultivation in the 1930s; it remains a common plant and for burns and abrasions. Important contemporary uses of the gel exist in traditional medicines of India, China, and Mexico, as well as

Middle America and the West Indies. Mexico is producing roughly 47% of aloe worldwide with a total sales volume of \$123.5 million US dollars as of 2008.^[1]

Despite its widespread popularity, scientific evidence on the aloe vera gel remains sparse. Aloe vera gel is regarded as safe if applied topical with only a few allergic reactions being reported.⁷ The efficacy of aloe vera gel to treat burn wounds, genital herpes, and seborrheic dermatitis have been shown in clinical trials, but other indications such as psoriasis or internal application for the treatment of type 2 diabetes remain inconclusive. The major application of aloe vera gel remains as a skin moisturizer in cosmetics and as an après treatment for sunburns, for which it has proven its effectiveness.



DESCRIPTION

Aloe vera is a succulent plant with thick, fleshy, serrated, lanceolate-shaped leaves of green-greyish color. Aloe vera inner gel is obtained from the lower leaves of the plant by slicing the leaf open. The gel is clear, odorless, and tasteless and should be free of leaf skin or yellow parts. No consistent standardization has been established, but the

International Aloe Science Council (IASC), a trade association of internationally based aloe producers and marketers, requires adherence to certain specifications for the product to be certified. Other preparations include a hydrophilic cream containing 0.5% aloe vera gel and an emulsion consisting of 30% aloe vera[2]

Ingredients

Aloevera juice , methyl parabin, carbapol 934, glycerin, sandalwood oil , rose water, triethalamine.

Active components with its properties:

Aloe vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.⁴⁻⁶

Vitamins: It contains vitamins A (beta-carotene), C and E, which are antioxidants. It also contains vitamin B12, folic acid, and choline. Antioxidant neutralizes free radicals.

Enzymes: It contains 8 enzymes: aliiase, alkaline phosphatase, amylase, bradykinase, carboxypeptidase, catalase, cellulase, lipase, and peroxidase. Bradykinase helps to reduce excessive inflammation when applied to the skin topically, while others help in the breakdown of sugars and fats.

Minerals: It provides calcium, chromium, copper, selenium, magnesium, manganese, potassium, sodium and zinc. They are essential for the proper functioning of various enzyme systems in different metabolic pathways and few are antioxidants.

Sugars: It provides monosaccharides (glucose and fructose) and polysaccharides: (glucomannans/polymannose). These are derived from the mucilage layer of the plant and are known as mucopolysaccharides. The most prominent monosaccharide is mannose-6-phosphate, and the most common polysaccharides are called glucomannans [beta-(1,4)-acetylated mannan]. Acemannan, a prominent glucomannan has also been found. Recently, a glycoprotein with antiallergic properties, called alprogen and novel anti-inflammatory compound, C-glycosyl chromone, has been isolated from Aloe vera gel.^{7,8}

Anthraquinones: It provides 12 anthraquinones, which are phenolic compounds traditionally known as laxatives. Aloin and emodin act as analgesics, antibacterials and antivirals.

Fatty acids: It provides 4 plant steroids; cholesterol, campesterol, β -sisosterol and lupeol. All these have anti-inflammatory action and lupeol also possesses antiseptic and analgesic properties.

Hormones: Auxins and gibberellins that help in wound healing and have anti-inflammatory action.

Others: It provides 20 of the 22 human required amino acids and 7 of the 8 essential amino acids. It also contains salicylic acid that possesses anti-inflammatory and antibacterial properties. Lignin, an inert substance, when included in topical preparations, enhances penetrative effect of the other ingredients into the skin. Saponins that are the soapy substances form about 3% of the gel and have cleansing and antiseptic properties.

2.1 Procedure

1. Take a fresh aloevera juice in a beaker heat it for 2 to 3 min. Then keep it aside for cooling.

2. At the same take another beaker take 0.01 gm methyl paraben and add into 15 ml of purified water. Mix it well and keep this solution for water bath stir it properly.
3. After dissolving the methyl parabin keep it aside for cooling. After cooling add carbopol 934 and stir it by using magnetic stirrer.
4. Take 35 ml aloevera juice and add into the methyl paraben. Mix it well.
5. After that add a glycerin and sandalwood oil as a flavoring agent.
6. Add a colouring agent. After that add a triethanolamine as a gelling agent. Stir it properly..the liquid is gets converts into gel. And aloevera gel is prepared.[3]

Formulation Of Aloever Gel

Sr.no	Chemical	MI/mg
1	Alovera Juice	35 mg
2	Purified Water	15 ml
3	Coarbopol 934	-----
4	Magnetic Stirrer	-----
5	Methyl Paraben	0.01 gm

2.2 Mechanism of Action

1. Effects 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.
2. Moisturizing and anti-aging effect: Mucopolysaccharides help in binding moisture into the skin. Aloe stimulates fibroblast which produces the collagen and elastin fibers making the skin more elastic and less wrinkle
3. Antiseptic effect: Aloe vera contains 6 antiseptic agents: Lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols and sulfur. They all have inhibitory action on fungi, bacteria and viruses.
4. **Healing properties:** Aloe gel not only increased collagen content of the wound but also changed collagen composition (more type III) and increased the degree of collagen cross linking. Due to this, it accelerated wound contraction and increased the breaking strength of resulting scar tissue.

Make aloe vera gel

You can manufacture aloe vera gel with either the leaves from your own aloe plant or those purchased at a grocery shop or farmer's market.

To manufacture aloe vera gel at home, you'll need the following ingredients:

1. a leaf of aloe vera
2. a knife or a peeler for vegetables
3. a little spoon

4. a food processor
5. a storage container that is airtight
6. vitamin C and/or vitamin E powder (optional)

Because the gel only lasts about a week without additional preservatives, it's recommended to simply utilize one or two leaves at a time. If you want to store it for a longer period of time, freeze it or add a preservative such as powdered vitamin C or E.[4]

Directions:

It simply takes approximately 30 minutes to prepare aloe vera gel once you have acquired all of the necessary items.

Benefits of using aloe vera gel

1. Skin that is clear and hydrated
2. Constipation relief (when ingested)
3. Heartburn relief (when ingested)
4. Decreasing blood sugar in type 2 diabetes patients (when ingested)
5. As a mouthwash substitute; when swished inside the mouth, it may help to block plaque and relieve bleeding or sore gums.
6. When administered topically to the affected area, it promotes the healing of anal fissures.
7. When applied to the scalp, it helps to repair damaged, dry hair.

Benefits Of aloe vera gel :

Reduces Acne Scars: This acne scar gel helps to lighten and reduce the appearance of acne scars, making your skin look smoother.

2. Soothes Acne-prone Skin: Vcare Aloe Vera Gel for acne helps to soothe and calm the skin, reducing redness and inflammation.

3. Easy to Use: The lightweight and non-greasy texture of this acne gel for face makes it easy to apply and use on a daily basis.

4. Moisturizes Skin: This is the best aloe vera gel for the face and provides intense hydration to the skin, making it soft and supple.

5. Suitability: The pure gel is suitable for all skin types for women and men.

Description

VCare Aloe Vera Gel, the best aloe vera gel for face helps you achieve healthy skin. Made with pure aloe vera, this face gel cream is an effective solution for all your skin problems. The acne gel is formulated to target acne-prone skin and provide a soothing and calming effect. It also helps to reduce inflammation and redness caused by acne. Apart from being the best gel for acne scars, it is also an excellent face gel for glowing skin. Its unique formula deeply moisturizes and hydrates the skin and helps to fade away scars and blemishes, making your skin look smoother and more even-toned.[5]

How to use aloe vera gel :

- 1.wash skin/hair with lukewarm water and pat dry.
- 2.use some Vcare moisturizer on face and hair.
- 3.leave it for 15 mins.
- 4.Rinse thoroughly with water.

2.3 Uses

- Hair
- Skin
- Moisturizer

• Adverse Effects

- Hypersensitivity reactions
- Allergic reactions

Aloe vera gel benefits for hair Calms an itchy scalp

Seborrheic dermatitis is the clinical term for the condition we call dandruff. The symptoms of an itchy scalp and flaking skin under your hair can be treated with aloe vera.

A 1998 [study](#) found that aloe vera helped resolve the scalp inflammation that dandruff causes. The fatty acids found in the aloe plant [have anti-inflammatory properties](#). [6]

Deep cleans oily hair

- Aloe vera cleanses the hair shaft efficiently, [stripping off extra sebum](#) Trusted Source (oil) and residue from other hair products.
- But aloe vera doesn't hurt your hair strands while it cleans. Unlike other chemicals in hair products, aloe vera is gentle and preserves the integrity of your hair.
- Using aloe vera is a great way to get hair that looks healthier, shinier, and softer.

Strengthens and repairs hair strands

- Aloe vera [contains](#) vitamins A, C, and E. All three of these vitamins contribute to cell turnover, promoting healthy cell growth and shiny hair.
- Vitamin B12 and folic acid are also contained in aloe vera gel. Both of these components can keep your hair from falling out.
- However, there are no studies that confirm conclusively that aloe vera has any benefit in preventing hair loss.
- Aloe vera is a popular product that people use on their skin after sun exposure. This is because

of its high collagen content and cooling properties. The vitamin content in aloe vera suggests that it might work to repair sun damage to your hair, too.

May promote hair growth

- When your scalp has been cleansed and your hair has been conditioned with aloe vera, you might see that hair breakage and loss slows down.
- There are plenty of people who claim that aloe vera actually causes hair to grow much faster. But as of now, there's little clinical evidence to prove or disprove those claims.

use aloe vera for hair

- You can find aloe vera gel in a huge range of skin and hair care products. [Shampoos](#), conditioners, [hair masks](#), shielding sprays, you name it. If it can be used to treat hair, someone will have used aloe gel as an ingredient at some point.
 - While you can def buy aloe vera gel for your hair at the store, you might have more fun making it at home. The plant itself is hardy and easy to grow even in small spaces. Once it's mature (about 3 years old) you can harvest individual leaves and extract your own gel like this:[7]
1. Use a sharp knife to cut one of the plant's lower leaves.
 2. Chop off the pointy tip of the leaf.
 3. Stand your leaf upright in a container for about 10 minutes to drain off the sap.
 4. Cut off both of the leaf's serrated edges.
 5. Using your knife or a vegetable peeler, carefully remove the top of the leaf.
 6. Use a knife or a spoon to scrape the jelly-like aloe gel from the leaf.
 7. Slice the gel up into cubes for easier storage.

The gel will keep for about a week if you store it in the fridge inside an airtight container. If you use aloe gel for your hair regularly, you'll be able to simply snip a new leaf off the plant whenever you need more.

Risks of using aloe vera for hair

[Aloe vera](#) allergies are rare, but they can happen. Stop using aloe vera gel ASAP if your skin becomes:

- red
- itchy
- swollen
- inflamed

PSA: Just because something contains aloe vera doesn't mean it's good for your skin. Always double-check a product's ingredients list to make sure it doesn't contain any irritating substances (like added fillers, dyes, fragrance etc.).

Check to make sure that aloe is the first ingredient listed on the label and if there are a bunch of other ingredients you can't pronounce, move on to a different product.

Aloe vera offers a lot of perks for your skin and hair. It may help reduce scalp itch, bolster shine, cleanse away oils, and strengthen brittle hair. And as an added bonus, it's cheap AF.

You can find aloe vera in lots of commercial hair products. You can also grow your own aloe vera at home and make your own masks and other treatments.[8]

Use Aloe Vera Gel for Skin

Apart from the benefits mentioned above, you can put aloe vera gel to many other uses for your face, skin, and hair. The following pointers would help you know how you can use it to get better results:



1. Dry skin:

If your skin always remains dry, you should consider **applying aloe vera to your face**. It would heal and hydrate the skin cells by providing hydration to the deeper layers.

2. As an eyebrow conditioner:

Applying aloe vera to the skin helps tame and condition the eyebrows. If you want to get your eyebrows to experience faster growth, you should try this gel as an easy and inexpensive option

3. Soothes dry and cracked feet:

Nobody wants those cracked heels. But they eventually develop due to a lack of hydration.

Massaging the feet with aloe vera gel helps make the skin texture smoother and softer.

4. **Moisturizes the hair and scalp:**

Aloe vera is a perfect moisturizing agent that works not only for your skin but for your hair also. It is quite gentle on hair and is easy to wash off too. It helps treat dryness and repairs the scalp's dead skin. It also helps cure dandruff and excessive hair fall.

5. **Works as a shaving gel:**

If your shaving gel is finished, you may also use **aloe vera gel on your face** to shave your stubble. This natural gel is quite gentle and thus helps treat cuts and burns on the face in a hassle-free manner. It also helps moisturize the skin, something that most shaving creams don't.

6. **Ice cube rub:**

Fill the ice cube tray with an aloe vera gel cube, then rub it on your face. All you get is a new shiny, glass skin that helps shrink the pores and lends a beautiful glow to the face. [9]

Aloe Vera Gel Great for the Skin

Thanks to its triple-layered setup, aloe vera directly offers more than 95% of its moisture content to skin cells. Here are some other **benefits of using aloe vera gel on the face** twice a day:

- **Soothes Inflammations:**

Aloe vera is also known as a 'burn plant' because it is quite effective in calming down skin inflammations caused by sunburns. It contains several compounds called polysaccharides that help promote a faster rate of cell repair. It also contains carboxypeptidase which helps calm down inflammation.

- **Keeps Your Skin Always Moisturized:**

Largely backed by water content, it works like a perfect hydrating agent for your skin cells. In addition, it contains essential compounds such as mucopolysaccharides that help lock the skin's moisture. Applying Mamaearth Aloe Vera Gel on face every day keeps the skin softer and smoother.

- **Combats Multiple Signs of Aging:**

Prolonged exposure to various environmental factors might lead to inflammation and soreness. It may also expose the skin to dark spots, hyperpigmentation, and acne scars. This happens because the skin momentarily loses some of its cells' regenerative ability. Aloe vera is a natural hydrating ingredient that helps reverse the changes and thus improves the skin's elasticity by boosting collagen production.

- **Treats Acne:**

Aloe vera naturally contains **salicylic acid face wash** that helps clean the skin pores more effectively. This helps remove dirt, excess sebum, and dead skin cells that might have otherwise caused acne. Applying **aloe vera gel on the face overnight** controls the infection and reduces the burning sensation and redness.

- **Cleanses the Skin:**

Applying aloe vera to the facial skin works like a charm because this green plant is a natural exfoliant. It contains natural saponins and salicylic acid that naturally exfoliate dead skin cells and infection-causing bacteria from the skin pores.

- **Evens Skin Tone:**

Due to prolonged exposure to environmental forces, our facial skin may develop white patches on the skin. Applying it regularly is quite effective in restoring the natural and improving the skin tone. It also improves cell regeneration rate and repairs skin tissues.

- **Reduces Itchiness:**

Lack of water content in the skin leads to itchy and dry skin, eventually leading to irritated skin conditions such as eczema and psoriasis. Rich in moisturizing properties, aloe vera is quite effective in treating the affected areas, such as the scalp or various parts of the face. [10]

Aloe Vera Benefits for Skin

The benefits of aloe vera extend far beyond soothing a sunburn.

Healing wounds. Aloe vera increases [collagen](#) in wounds and scar tissue to help the skin heal faster.

Protects against skin cancer.

Aloe vera may prevent UV and gamma radiation damage.

Anti-aging effects.

Humectants in aloe vera bind moisture to the skin. Using it as a moisturizer can help stimulate both collagen and elastin fibers, boosting the elasticity of your skin. This could mean fewer fine lines and wrinkles.

Safety and Potential Side Effects

It's possible to use too much aloe vera as a moisturizer. Aloe has enzymes that act as exfoliants. Too much may lead to excessive oil or dryness.

Moisturize Your Skin

Aloe Vera is a humectant and using it in any form will keep the skin hydrated. Dabbing a pure aloe-vera based [face moisturizer](#) on the face and neck will keep the skin soft, hydrated, and glowing at all times. You may opt for [Mamaearth Aloe Vera Oil-Free Face Moisturizer](#). It has an oil-free and non-greasy formulation that offers hydration for 24 hours. Do remember to maintain an AM-PM skincare routine for healthy glowing skin.[11]

Aloe vera moisturizer

and can help to soothe dry skin. It also has anti-inflammatory properties, which can help to reduce the appearance of blemishes and wrinkles. Plus, aloe vera is non-irritating and can be used on any type of skin.

Manufacturing Process:



Uses & Market Potential:

Increasing use of aloe vera gel in skin care products is the major driving factor of aloe vera gel market growth. Additionally, aloe vera gel has different type of beneficial properties anti-inflammatory, acne removing, anti-oxidation, herbal, and several others it helps to increase the aloe vera gel market. Aloe vera gel is easy to available in mall, medical stores, etc. most of peoples are rapidly changes their preferences towards the healthy life style such as using natural ingredient- based cosmetics in recent years. Aloe vera gel is also a vital product for constipation. The demand within the global market for aloe vera gel is projected to escalate at the back of the growing popularity of herbal cosmetics. The global market for aloe vera gel is estimated to grow at a CAGR of 7.8% by value and 7.3% by volume during the forecast period 2018-2027.[12]



Product:

Natural Aloe Vera Gel

Raw Material:

1. Aloe Vera Leaves

2. Calcium Hypochlorite
3. Carbopol
4. Aristroflex
5. Packing Materials[13]

Manufacturing Process:

CONCLUSION

In this project we can preped the aleovera gel and study their preparation. Uses , their action , adverse drug effects. It seems that the application of Aloe vera, as a complementary treatment along with current method, can improve wound healing and promote the health. Prmosinglyit may also provide other health benefits, largely due to its antioxidants property.

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