

Original Article

## The Healing Power of *Aloe Barbadensis* Miller And *Prunus Dulcis*: A Comprehensive Review

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### ABSTRACT:

Nowadays, cosmetics are becoming more high demand in daily life and it was used frequently by many of people per year. Mankind uses various products to enhance beauty and elegance to look young and charming. Cosmetics thus play a vital role in human life.

Now days, herbal cosmetic are widely used because of the belief that they have fewer side effects and better safety.

Hair is one of the primary parts of the body which acts as a protective appendage. The main objective of the present work is to develop an herbal hair serum for general purpose (daily use) using various herbs with this evaluate the characteristics of cosmetic serum and to identify the best formulation of cosmetic serum.

Three formulations of cosmetic serum (H<sub>1</sub>, H<sub>2</sub> and H<sub>3</sub>) with different concentration of excipients have been developed.

They were evaluated for its physical appearance, pH, homogeneity test, viscosity, spreadability test and stability test. All the parameters were found to be good and within the standards. Current research has revealed that herbal formulations are effective in enhancing hair consistency.

In the mammalian system, the hair follicle is known to be the most significant organ that determines appearance, gender distinction, give violent temperature protection, and plays a part in tone- defense.

**Keywords:** Aloe vera, Almond oil, Antioxidant, Anti-dandruff.

### 1.Introduction

A luxurious blend featuring the nourishing power of almond oil and aloe vera. Almond oil deeply hydrates and strengthens your hair, while aloe vera soothes the scalp and promotes healthy growth.

This serum is designed to give your hair a soft, shiny, and revitalized appearance. Ideal for all hair types, it helps reduce frizz, prevent split ends, and enhance overall hair health.

Experience the perfect fusion of nature's best ingredients for vibrant, beautiful hair. Almond oil, rich in essential fatty acids, vitamins, and minerals,

enhances your hair's natural shine and softness. It penetrates deeply to condition and strengthen each strand, improving elasticity and reducing breakage.

This lightweight oil also helps to tame frizz and flyaways, leaving your hair smooth and manageable. Our Hair Serum is perfect for all hair types, whether you have curly, straight, or wavy hair. For best results, apply a few drops to clean, damp hair, focusing on the ends to prevent split ends and to add a glossy finish.

Enjoy the benefits of this nutrient-rich formula which provides long-lasting hydration and protection while leaving your hair looking radiant and feeling silky-smooth. Elevate your hair care routine with our aloe vera and almond oil-infused Hair Serum and embrace the beauty of healthy, lustrous hair.

Aloe vera, known for its deep moisturizing properties, soothes and hydrates the scalp, creating an optimal environment for healthy hair growth. It also helps to repair and strengthen hair from root to tip, reducing dryness and flakiness.

Almond oil, rich in essential fatty acids, vitamins, and minerals, enhances your hair's natural shine and softness. It penetrates deeply to condition and strengthen each strand, improving elasticity and reducing breakage. This lightweight oil also helps to tame frizz and flyaways, leaving your hair smooth and manageable.

Grown in hot, dry areas, aloe vera, also called Guarpatha locally, is a plant that resembles a cactus. Aloe vera is used in folk medicine, where it is said to have anti-inflammatory, immunomodulatory, and wound and burn healing qualities. Because of these medicinal qualities, *A. vera* is utilized in many different commercial goods. Two widely utilized compounds, gel and yellow sap, are derived from the plant. These products have different chemical compositions and different medicinal properties.

The clear, viscous substance known as "juice" or "gel" is extracted from the plant's parenchymal tissues in the leaves. The second byproduct is latex, or yellow sap, which is found in pericyclic tubule cells.

Aloe vera has long been used for treating hair loss. It also soothes the scalp and conditions hair. It can reduce dandruff and unblock hair follicles that may be blocked by excess oil. You can apply pure aloe vera gel to your scalp and hair a few times per week.

It is promoted as a moisturizer and anti-irritant to reduce chafing of the nose. A medicinal substance that is active and cathartic, sometimes referred to as aloe. The species is native to Southern Africa, and human cultivation has resulted in populations that exist abroad. It can be found in Tamil Nadu, Maharashtra, Gujarat, Rajasthan, and Andhra Pradesh, India.

### **Topical medication and potential side effects**

Aloe vera may be prepared as a lotion, gel, soap or cosmetics product for use on skin as a topical medication. For people with allergies to Aloe vera, skin reactions may include contact dermatitis with mild redness and itching, difficulty with breathing, or swelling of the face, lips, tongue, or throat.

### **Digestive system inflammation reduction**

Two small studies found positive effects vs placebo for ulcerative colitis and irritable bowel syndrome (IBS).

### **Dietary supplement**

Aloin, a compound found in the semi-liquid latex of some *Aloe* species, was a common ingredient in over-the-counter (OTC) laxative products in the United States until 2002

when the Food and Drug Administration banned it because manufacturers failed to provide the necessary safety data. Aloe vera has potential toxicity, with side effects occurring at some dose levels both when ingested and when applied topically. Although toxicity may be less when aloin is removed by processing, *Aloe vera* ingested in high amounts may induce side effects,

such as abdominal pain, diarrhea or hepatitis. Chronic ingestion of aloe (dose of 1 gram per day) may cause adverse effects, including hematuria, weight loss, and cardiac or kidney disorders.

Aloe vera juice is marketed to support the health of the digestive system, but there is neither scientific evidence nor regulatory approval for this claim. The extracts and quantities typically used for such purposes are associated with toxicity in a dose-dependent way.

### Traditional medicine

Aloe vera is used in traditional medicine as a skin treatment. Early records of its use appear from the fourth millennium BCE. It is also written of in the *Juliana Anicia Codex* of 512 CE.

### Commodities

*Aloe vera* is used on facial tissues where Cosmetic companies commonly add sap or other derivatives from *Aloe vera* to products such as makeup, tissues, moisturizers, soaps, sunscreens, incense, shaving cream, or shampoos. A review of academic literature notes that its inclusion in many hygiene products is due to its "moisturizing emollient effect".

### Toxicity :

Orally ingested non-decolorized aloe vera leaf extract was listed by the California Office of Environmental Health Hazard Assessment among "chemicals known to the state to cause cancer or reproductive toxicity", possibly resulting from the anthraquinones.

Since 2016, aloe vera whole leaf extract is classified as a possible human carcinogen (group 2B) by the International Agency for Research on Cancer.

Use of aloe vera on the skin is generally not associated with significant side effects. Oral ingestion of aloe vera is potentially toxic, and may cause abdominal cramps and diarrhea which in turn can decrease the absorption of drugs.

Almond (*Prunus amygdalus* Batsch, syn. *Prunus dulcis* Miller, syn. *Amygdalus communis* L.) is a species native of South-West Asia, that belongs to the Rosaceae family, Amygdaloideae subfamily. According to phylogenetic studies

based on chloroplast DNA analysis, almond and peach (*Prunus persica*) appear to be the most closely related species among cultivated *Prunus* and are classified into the subgenus *Amygdalus*.

Actually almond and peach are thought to have evolved from the same primitive stock: peach seems to have evolved eastward into China at lower elevations in regions of higher humidity, whereas almonds spread along the deserts and lower mountain slopes to the West, developing many subspecies along the way. In 3,000 BC, domesticated almond (sweet-seeded) was in use in Mediterranean civilizations. With regard to Italy, almond was first brought to Sicily by the Greeks, in the 5th century B.C.

Almond is the most important nut crop worldwide. According to the last available FAO data (FAOSTAT), the USA were the first almond producing country in 2010, with 1,413,800 tons of shelled almonds (mainly from California), followed by Spain with 221,000, Iran with 158,000 and Italy with 108,160 tons. Most of traditional varieties are self-incompatible and early-blooming, both facts causing them to have a little production, due to low fertility and frost damage to the flowers. That caused, in the last decades, a regression of traditional almond cultivation in Italy both in terms of lands and production.

Such a decline is also due to the application of agronomic techniques not suitable to the needs of a modern almond cultivation.

## 2. Literature Review

### 1. Aloe Vera



**Synonym :-** Ghritkumari, Musabbar, Aloe

**Biological source:** Aloe is the dried juice collected by incision, from the bases of the leaves of various species of Aloe. Aloe Perryi Baker, Aloe Vera Linn or Aloe Bardadensis Mil and Aloe Ferox Miller.

**Family:** Liliaceae

### **Chemical Constituents:**

The three Aloin isomers Barbaloin, and Isobarbaloin, which make up the so-called 'crystalline' Aloin and are found in the medication at concentrations of between 10 and 30%, are the most significant components of aloes. Amorphous Aloin, resin, emodin, and aloemodin are other components.

Barbaloin is a crystalline glycoside that is present in all species of aloe; it is slightly yellow in colour, bitter, and water-soluble.

Isobarbaloin is a crystalline compound that is absent from Socotrine and Zanzibar aloes and just marginally present in Cape aloe. Barbaloin and - Barbaloin are the main ingredients in Zanzibar aloe and Socotrine, respectively.

### **Uses :**

- Helps skin with irritation, sunburn, or inflammation.
- This herb is soothing and contains antioxidants, vitamin C, and other minerals.
- To obtain this gel, the leaves can be cut in half along their length and the inner pulp rubbed over the affected area of skin.
- This has an immediate soothing effect on all sorts of burns and other skin problems

### **Active components with its properties:**

Aloe vera contains 75 potentially active constituents: vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids and amino acids.<sup>(4-6)</sup>

1. **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.

2. **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.

3. **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.

4. **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-glucosyl chromone, has been isolated from Aloe vera gel.<sup>(7,8)</sup>

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

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

### **Uses:-**

- ☐ Anti-inflammatory.
- ☐ Heal wound.
- ☐ Anti-aging.
- ☐ Treats dry skin.
- ☐ Treats stretch mark.

### **Aloe vera has various medicinal properties like**

- ☐ Anti-inflammatory
- ☐ Antibacterial
- ☐ Antiviral
- ☐ Antitumor

## **2.Almond Oil**



The nourishing oil can soften and strengthen your hair. It's rich in vitamin B-7, or biotin, so almond oil helps to keep hair and nails healthy and strong. It can also help protect your hair from sun damage, with a natural SPF 5. You can use almond oil as a scalp treatment.

Different from a genuine nut, the almond fruit is classified as a drupe since it has a hard shell surrounding the seed and an outer hull. To get at the seed, almonds must have their outer shell removed. This process is known as shelling.

It is possible to buy almonds both with and without shells. Almonds with shells that have been treated with hot water to soften the seedcoat, which is then removed to show the white embryo, are referred to as blanched almonds.

Almonds have an extended shelf life after cleaning and processing. A common ingredient in many different cuisines, almonds are often used in sweets like marzipan. These trees grow well in a Mediterranean climate with mild summers and chilly winters. Even if they are local residents.

Even though wild almond trees are native to areas like Iran and the Levant, it's uncommon to locate them there these days. Archaeological discoveries in the Middle East attest to the long history of domestication of almonds, which dates back to the Early Bronze Age. Since then, they have proliferated throughout the Mediterranean region and other desert regions with chilly winters. Almonds are noteworthy for their capacity to generate excellent offspring directly from seed, without the use of suckers or cuttings.

Almonds, as well as the oil pressed from them, were well known in Greece and Italy long before the Christian era. A beautiful fable in Greek mythology is associated with the tree.

Servius relates that Phyllis was changed by the gods into an Almond tree as an eternal compensation for her desertion by her lover Demophon, which caused her death by grief. When too late, Demophon returned, and when the leafless, flowerless and forlorn tree was shown him, as the memorial of Phyllis, he clasped it in his arms, whereupon it burst forth into bloom

an emblem of true love inextinguishable by death [6]. During the Middle Ages, Almonds became an important article of commerce in Central Europe. Their consumption in medieval cookery was enormous. An inventory, made in 1372, of the effects of Jeanne d'Evreux, Queen of France, enumerates only 20 lb. of sugar, but 500 lb. of Almonds

**Biological source:** Almond oil is obtained from the seeds of *Prunus amygdalus*

**Family:** Rosaceae

**Description**

The oil is pale yellow in color.

It has characteristic odour in cosmetic liniment because of its emollient, it is used in the preparation of creams and lotions

**Chemical Constituents:**

Both varieties of almond contain 40-55% of fixed oil, about 20% of proteins, mucilage and emulsin. The bitter almonds contain in addition 2.5-4.0% of the colourless, crystalline, cyanogenetic glycoside amygdalin.

Almond oil is obtained by grinding the seeds and expressing, them in canvas bags between slightly heated iron plates.

- The oil is clarified by subsidence and filtration. It is a pale yellow liquid with a slight odour and bland nutty taste.

It contains olein, with smaller quantities of the glycosides of linoleic and other acids. a flavouring agent.

- Sweet almonds are extensively used as a food, but bitter almonds are not suitable for this purpose.

**Pharmacological Activities of Almonds**

The edible portion of the *Prunus amygdalus* is its nuts, which are commonly known as “almond” or “badam”, and it is a popular, nutritious food. The almond, which is known as the king of nuts, is a highly nutritious food.

Almonds are rich in healthy fats, proteins, minerals and vitamins. In addition to its nutritional values, it has some medicinal values that may be helpful for treating certain diseases and health problems.

The almond is an effective health building food, both for the body and the mind; it is also a valuable food remedy for several common ailments.

The nuts of *Prunus amygdalus* are found to possess various pharmacological properties, such as anti-stress, anti-oxidant, immunostimulant, lipid lowering, and laxative. The almond is highly beneficial in preserving the vitality of the brain, strengthening the muscles and prolonging life.

Almonds are a useful food remedy for anaemia, as they contain copper, iron and vitamins

**Characteristics**

Almond trees are about 5 m in height. The young fruits have a soft, felt-like pericarp, the inner part of which gradually becomes sclerenchymatous as the fruit ripens to form a pitted endocarp or shell. The shells, consisting mainly of sclerenchymatous cells, are sometimes ground and used to adulterate powdered drugs.

The sweet almond is 2–3 cm in length, rounded at one end, and pointed at the other. The bitter almond is 1.5–2 cm in length but of similar breadth to the sweet almond. Both varieties have a thin, cinnamon-brown testa which is easily removed after soaking in warm water. The oily kernel consists of two large, oily planoconvex cotyledons, and a small plumule and radicle, the latter lying at the pointed end of the seed. Some almonds have cotyledons of unequal sizes and are irregularly folded.

Bitter almonds are found in samples of sweet almonds; their presence may be detected by the sodium picrate test for cyanogenetic glycosides.

**Immunostimulant Activity :**

Adriana Arena, et al, evaluated in their study, that with almonds, high levels of cytokine production were observed i.e., interferon- $\gamma$  (INF- $\gamma$ ), interleukins (IL-12), INF-gamma and tumour necrosis factor (TNF- $\alpha$ ).

Their data suggested that almonds improved the immune surveillance of the peripheral blood mononuclear cells towards viral infections. Almonds also were found to induce a significant decrease in the Herpes simplex virus (HSV-2) replication.<sup>(21)</sup>

Besides fatty oil, almonds also contain a variety of phenolic compounds which are localized principally in their skin,

including flavonols (isorhamnetin, kaempferol, quercetin, catechin and epicatechin), flavanones (naringenin), anthocyanins (cyanidins and delphinidin), procyanidins, and phenolic acids (caffeic acid, ferulic acid, p-coumaric acid and Vanillic acid).<sup>[15]</sup>

The active constituents of almonds are globulins such as amandine and albumin and amino acids such as arginine, histidine, lysine, phenylalanine, leucine, valine, tryptophan, methionine and cystine. Almonds contain proteins and certain minerals such as calcium and magnesium.

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### **Taxonomical Classification :**

Kingdom	Plants
Subkingdom	Tracheobionta-Vascular plants
superdivision	Spermatophyta-Seed
Division	Magnoliophyta-Flowering
Class	Magnoliopsida-Dicotyledons
Subclass	Asteridae
Order	Asterales
Family	Asteraceae-Aster family
Genus	Tridax L. tridax

### **3. Conclusion:**

In conclusion, the combination of aloe vera and almond oil creates a powerful, nourishing hair serum that promotes healthy, vibrant hair. Aloe vera's hydrating properties work in tandem with the vitamins and fatty acids found in almond oil to strengthen strands, reduce breakage, and enhance overall shine. By incorporating this natural serum into your hair care routine, you can enjoy the benefits of improved manageability and scalp health. Embrace the art of self-care and take the step towards revitalizing your hair with this simple yet effective blend.

Your journey to luscious locks begins with just a few drops—try it today and experience the transformation for yourself!

Combining aloe vera and almond oil creates an effective hair serum that promotes healthy hair growth and enhances overall hair vitality. This natural formulation harnesses the nourishing properties of both ingredients to support hair health.

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