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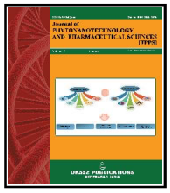

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A review on therapeutic potential of aloe vera (*Aloe barbadensis* Mill.)

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Abstract

Aloe vera (*Aloe barbadensis* Mill.) Liliaceae family, which is also known as Katraazhai, Quargandal, Ghritkumari, and Gheekvar is a member of the Liliaceae family. The triangular, fleshy aloe plant leaves are long (approximately 20 inches long and 5 inches broad, long) and have spikes on the edges. It is a component of several drugs such as constipation, burns, genital herpes, dandruff, osteoarthritis, inflammatory bowel disease, asthma, and epilepsy have all been treated with it. Aloe vera is also used in a lot of medications and used in various ways such as medicines, instant drinks, animal feeds, and fertilizers, *etc*. Numerous illnesses, such as epilepsy, osteoarthritis, traumas, genital warts, dandruff, osteoarthritis, and inflammatory bowel disease have all been treated with it. Aloe vera is also a very crucial plant used to cure many types of diseases such as cancer, diabetes, and gastrointestinal. It is consumed by mostly diabetes, and cancer patients. They contain protein, calcium, magnesium, zinc, vitamins A, B12, C, and E as well as important fatty acids, which are all present in aloe vera. Aloe vera is a broad immune system tonic that supports the body's ability to combat all types of sickness. In this review, we discussed one of the most important medicinal plants called aloe vera plant, also used in pharmaceutical industries, used as food supplements in bakeries, dairy products, aloe juices and confectionaries.

1. Introduction

Aloe vera is both the oldest and most popular medicinal plant in the world. Skin damage can be treated using aloe vera extracts. Aloe Vera's antibacterial effects ease itching and skin swellings and it helps to cure burns, skin irritations, wounds, and insect bites. It is well recognized to actively heal the damaged dead cells that create the outward indications of ageing and can help slow down the development of wrinkles. Aloe is an effective detoxifier, antibacterial and nervous system tonic. Additionally, it strengthens the immune system and is antiviral. Aloe vera aids digestion. According to research, when added to the diet improves digestion. Aloe vera is a valuable source of vitamins. Vitamin B_{12}, vitamin A, B-group vitamins, vitamin C, vitamin E, and folic acid are among the vitamins found in aloe vera gel. Aloe vera gel contains seven of the eight essential nutrients that the body cannot produce on its own, as well as 19 of the 20 essential amino acids that the body needs to function properly (Rajeswari *et al*., 2012).

2. Structures along with leaf contents

Among the more than 3002 aloe species known to science, only a small number are being employed in the pharmaceutical and beauty sectors. The most widely used varieties are *Aloe ferox*, *Aloe perryi*, and *Aloe barbadensis*. The mucilaginous cells with thin walls that make up the inner centre of aloe leaves are used to make aloe gel. The gel is the aloe product that the cosmetic industry employs most because it contains a variety of organic ingredients thought to contribute to the gel's purported emollient, moisturising, and healing properties (Klein and Penneys, 1988). There are 250 species of Aloe, including the semi-tropical plant Aloe vera. Aloe vera, also known by its Sanskrit name "Ghee Kanwar," is a plant that is most frequently used for therapeutic purposes. It belongs to the lily family. Lance-shaped, pointy, jagged, and edged leaves are present on the plant. Along the southern Indian coast, aloe vera grows wild. Aloes are sometimes mistaken for plants that only flourish in hot, dry conditions, although they may also thrive in the desert, grassland, coastal, and even alpine regions. *Aloe barbadensis* contains around 200 different substances, roughly 75 of which have biological activity. Anthrones and related glycosides, including A and B, also known as 10-(1, 5-anhydroglucosyl)-aloeemodin-9-anthrone, are among the several substances found in aloe vera leaves (Manvitha and Vidya, 2014). It features fleshy, triangular, acaulescent leaves that range in colour from grey-green to brilliant green and have tiny white teeth on the borders. The leaves are composed of three layers: the rind, which comprises the thick outermost part consisting of 15-20 cells, the yellow sap, and the internal gel. Other investigations have shown that latex and gel are the two basic parts of aloe vera. The cuticular tubules beneath the leaf's epidermis are where the latex, popularly known as "aloe juice" or "aloe sap," is produced. It accounts for (20-30%) of the leaf's overall weight (Christaki and Florou Paneri, 2010).

3. Structural components

The three structural components of the aloe vera pulp are cell walls, degraded cells, and indeed the viscous liquid within the cells. It has been established that these three inner leaf pulp components may be distinguished from one another both in regard to shape and sugar content. The mucilage or jelly of aloe vera contains around (99.5%) water, compared to the raw pulps about (98.5%) water content. Vitamins, minerals, enzymes, polysaccharides, phenolics, organic acids, and both water- and fat-soluble vitamins make up the remaining 0.5 to 1% solid material (Hamman, 2008).

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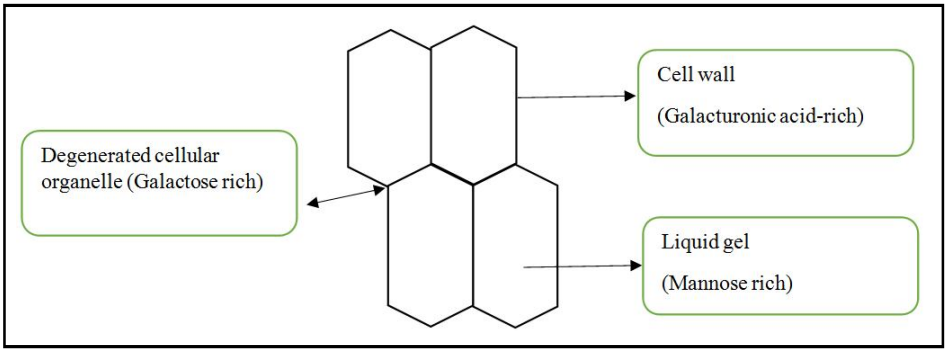

Figure 1: Aloe vera gel structure.
(**Source:** Ni *et al.*, 2004).

4. Chemical composition of aloe vera

Leaf tissue from aloe vera as well as exudate produced by cells close to vascular bundles. The bitter yellow exudate contains the 1,8-dihydroxyanthraquinone molecules and their components, which are mostly used for their cathartic properties (Vazquez *et al*., 1996). It has been established that aloe parenchyma tissue or flesh also includes proteins, lipids, amino acids, vitamins, enzymes, inorganic compounds, and minute organic molecules in addition to the numerous carbohydrates. The aloe plant has a usual pH of 4.5 and is composed primarily of water, with a concentration of around 99 and 99.5 per cent. More than 75 distinct substances, including vitamins, minerals, enzymes, glucose, anthraquinones or phenolics, lignin, saponins, sterols, amino acids, and salicylic acid, may be found in the residual solid material (Atherton, 1998).

Table 1: Composition of aloe vera gel

Classes	Compounds
Anthraquinones/anthrones	Aloe emodin, aloetic acid, ethanol, aloin A, and B (collectively known as barbaloin), isobarbaloin, emodin, and ester of cinnamic acid.
Carbohydrates	Pure mannan, acetylated mannan, acetylated glucomannan, glucogalactomannan, galactan, and galactogalacturan.
Chromones	8-C-glucosyl-(2'-O-cinnamoyl)-7-O-methylaloediol A, 8-C-glucosyl-(S)-aloesol, 8-C-glucosyl-7-O-methyl-(S)-aloesol, 8-C-glucosyl-7-O-methylaloediol, 8-C-glucosyl-noreugenin, isoaloeresin D, isorabaichromone, and neoaloesin A.
Enzymes	Alkaline phosphatase, amylase, carboxypeptidase, catalase, cyclooxidase, cyclooxygenase, lipase, oxidase, phosphoenolpyruvate carboxylase, and superoxide dismutase
Inorganic compounds	Calcium, chlorine, chromium, copper, iron, magnesium, manganese, potassium, phosphorous, sodium, and zinc
Organic compounds and lipids	Arachidonic acid, γ-linolenic acid, steroids (campesterol, cholesterol, βsitosterol), triglycerides, triterpenoid, gibberellin, lignins, potassium sorbate, salicylic acid, and uric acid
Non-essential and essential amino acids	Alanine, arginine, aspartic acid, glutamic acid, glycine, histidine, hydroxyproline, isoleucine, leucine, lysine, methionine, phenylalanine, proline, threonine, tyrosine, valine.
Proteins	Lectins, lectin-like substances.
Saccharides	Mannose, glucose, L-rhamnose, and aldopentose.
Vitamins	B_1, B_2, B_6, C, β-carotene, choline, folic acid, and α-tocopherol.

(**Source:** Hamman, 2008).

5. Physical properties of aloe vera

Species, climate, and growth circumstances all affect the chemical and physical makeup of aloes. For instance, during the winter, overall soluble solids declined while average leaf mass increased, which suggests that the lighter leaf weight in the summer may be due to water absorption and extended daylight hours. Instead of irrigation techniques, alterations in mineral concentration were attributed to horticulture practices such as crop rotation and fertilisation plans. The main effects of restricted light availability were shown to be the distribution of carbon to plant parts, including the number of leaves per tree and as a whole dry mass production. The high-water content of aloe vera plants, which ranges from (99 to 99.5%), makes them unusual. The remaining 0.5-1.0 per cent solid material is said to include a broad range of nutrients, including liquid and fat-soluble vitamins, minerals, enzymes, simple and complex polysaccharides, phenolics, and organic acids. There are over 75 different supposedly active compounds (Boudreau and Beland, 2006).

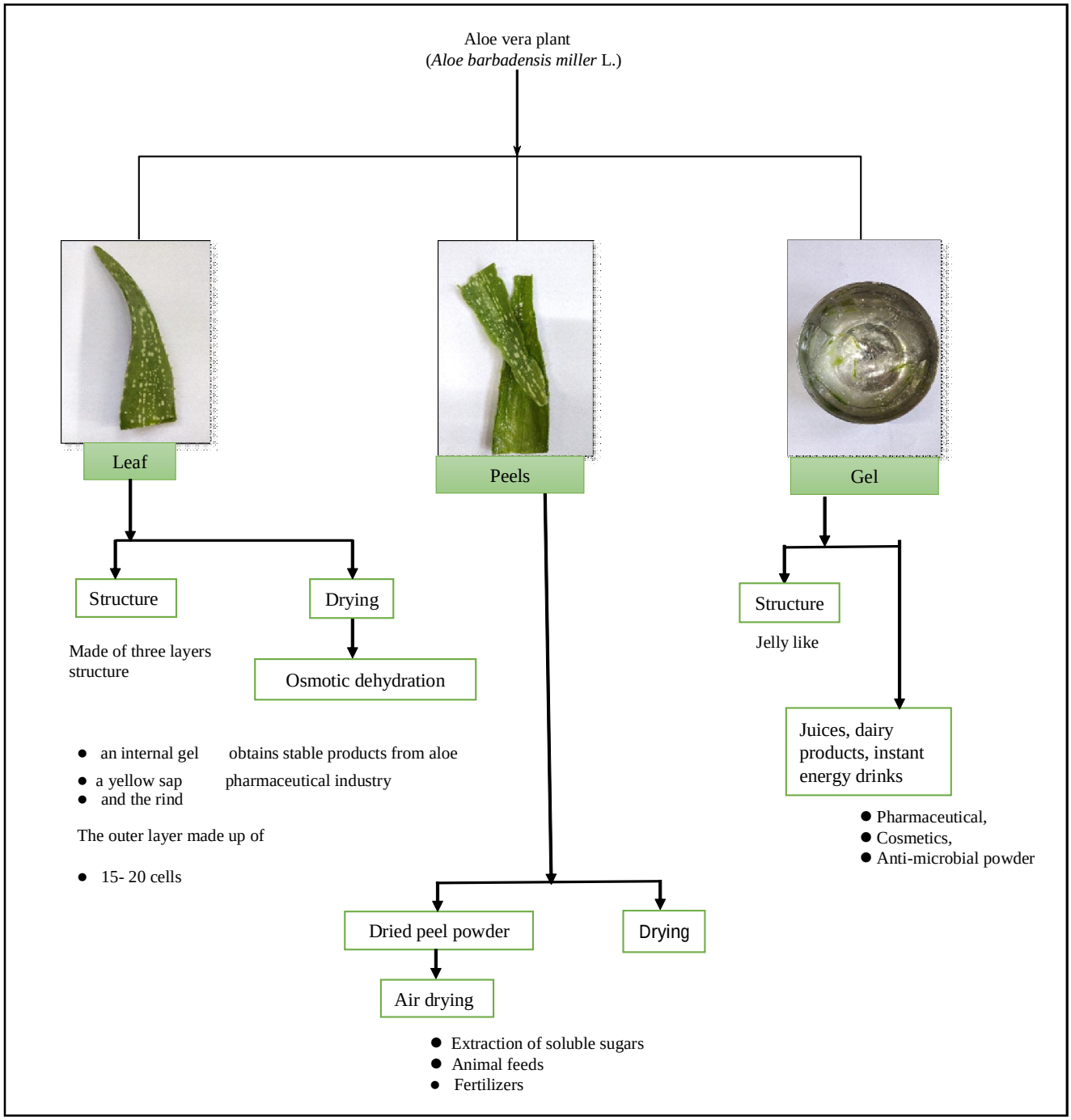

Figure 2: Future application of different parts of aloe vera (*Aloe barbadensis* Mill).

6. Chemical properties of aloe vera

Compositional research on the structural elements of aloe vera plant leaves portions revealed that the pulp made up (70-80%) of the total leaf mass and the rind made up (20-30%) of it. A tiny amount of the dry weight per cent of peel and pulp was representeded by lipids (2.7%) and proteins (6.3%) of the responders, and (7.3%) only made up a minor portion of the total (Boudreau and Beland, 2006).

7. Nutritive values

7.1 Carbohydrate

The fraction that contains carbohydrates makes up (25-50 %) of the fraction's solid component and is the largest fraction (0.25 %) of the entire gel composition. It contains polysaccharides, which make up the majority of aloe vera gel's dry matter. Others are monosaccharides and polysaccharides, free sugars, and fibres are some of them. The most significant substances are glucomannans, which are long-chain linear polysaccharides made up of glucose and mannose subunits and are also known as beta (1,4)-linked acetylated mannan.

7.2 Vitamins

Ascorbic acid, carotenoids, tocopherols, vitamins B1 (thiamine), B2 (riboflavin), B-complex, niacin, and folic acid are just a few of the components found in aloe vera gel. Most of them have the potential to be antioxidants (Lawless and Allen, 2000). Additionally, trace amounts of vitamin B_{12} were found in the gel (Atherton, 1997).

7.3 Enzymes

At least six distinct enzymes, including cellulose, carboxypeptidase, amylase, brady kinase, oxidase, and catalase, are found in aloe vera gel. These enzymes break down the lipids and carbohydrates in the food, aiding in digestion and nutritional absorption (Meadows, 1980).

7.4 Minerals

Aloe vera gel contains a variety of nutrients, including calcium, iron, copper, zinc, and chromium. Aloe vera gel's antiallergic properties are assumed to be caused by the amount of magnesium lactate in the substance. Aloe vera has higher concentrations of potassium and chloride than the majority of other plants, but less in sodium (Wang, 1993).

7.5 Proteins

The study found that although allostatic B has a size of the particles of 24 kDa and up to 12 kDa subunits, allostatic A has a molecular mass of 18 kDa and presumably consists of 7.5 and 10.5 kDa components with an (18%) carbohydrate content (Akev *et al*., 2007). Seven of the eight necessary amino acids for human utilization are present in the gel. Out of the total 22 amino acids, there are 20 amino acids are present (Yagi *et al*., 1997).

8. Effects of aloe vera

8.1 Anti-microbial effects

Aloe vera stops food from spoiling and the growth of germs that cause both human and animal foodborne illnesses (Eshun and He, 2004).

8.2 Antibacterial effect

The aloe extract proved efficient against Mycobacterium strains with strong antimycobacterial activity against Mycobacterium, coupled with antimicrobial properties towards *Salmonella typhi*, *E. coli*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*. Aloe vera gel has been shown to suppress the development of the bacteria, *Streptococcus pyogenes* and *Streptococcus faecalis* (Djeraba and Quere, 2000).

8.3 Antifungal effect

Malassezia furfur's growth upon Sabouraud's dextrose agar medium was gradually suppressed, which was how the study demonstrated their antifungal properties. *Candida albicans* growth was reduced by a prepared aloe vera gel formulation (Rezazadeh *et al*., 2016). Study results revealed that other species were less advantageous than aloe vera (Vijayakumar *et al*., 2006). Aloe vera pulp's capacity to inhibit the development of *Rhizoctonia solani* and *Colletotrichum coccodes* mycelium led to a slower rate of colony expansion (De Rodrýguez *et al*., 2005).

8.4 Antidiabetic effect

According to some data in both people and animals, persistent hyperglycemia and an aberrant lipid profile, aloe vera may mitigate these signs of diabetes mellitus, which are significant cardiovascular risk factors and markers of the disease (Ralph and Provan, 2000). Aloe vera, which has been proven to be useful in the treatment of diabetes, a common problem for pregnant women, could be regularly used to help avoid gestational diabetes (Rajasekaran *et al*., 2004).

8.5 Wound curing

Aloe vera is a popular treatment for injuries and other maladies because of its calming and restorative qualities. When aloe vera is administered to a wound, both cell proliferation and pace are increased (Kumar and Debjit, 2010).

9. Medicinal uses

- Consuming aloe vera gel can help treat digestive problems including heartburn and gastrointestinal problems**.**
- Adding sap or other aloe vera derivatives to cosmetic items including makeup, tissues, moisturisers, soaps, sunscreens, incense, razors, and shampoos is a typical technique for cosmetic industries.
- Even though, it is unclear when its medicinal uses were first recognized, aloe vera seems to have a rich history of use in herbal medicine.
- Aloe vera has a long tradition of being connected to herbal medicine, even though it is uncertain moment its first medicinal uses were discovered.
- Consuming aloe vera is harmless and does not have any known side effects as far as the aloin has already been removed by processing.
- Those who received treatment with aloe vera gel experienced much-delayed healing than those who received standard medical treatments.

- Aloe vera has been reported to raise blood glucose levels in diabetics and hyperlipidaemic people when used topically to treat burns or wounds. It has also been connected to acute hepatitis (liver illness) and reduces blood lipid levels in hyperlipidaemic patients.
- The various therapeutic advantages of aloe vera make it clear that the plant has a significant impact on our lives and has a big impact on the medical sector.
- In addition to psoriasis, rosacea, warts, ageing, and wrinkles, aloe vera helps cure eczema. It also aids in the treatment of frostbite and shingles.

(Source: Rajeswari *et al*., 2012).

10. Using aloe vera as a dietary supplement

Aloe vera juice is broadly utilized in foods, including ready-to-serve beverages, soft drinks, laxative beverages, health beverages, and sports beverages (Eshun and He, 2004). Aloe juice is also often used in sherbet, aloe vera lemon juice, sports drinks with electrolytes, and aloe juice containing soluble fibre. For instance, create a tropical fruit juice by combining cucumber juice with other juices (Grindlay and Reynolds, 1986). Using acetobacter sp., aloe juice was turned into vinegar. Similar to yoghurt made from dried skim milk was compared yoghurt made from lactic acid bacteria, aloe vera yoghurt was also made. At 5^{o}C for 15 days, it was shown that aloe vera yoghurt had a higher quality than milk yoghurt. In order to make jams, jellies and squashes, aloe concentration of various consistencies is utilized. Additionally, water, juice and tea can be combined with the concentrates. Ice cream, “lassi” (yoghurt beverage), biscuits, curd, and aloe vera “laddu” (local sweets) can be made with aloe powder (Javed, 2014).

10.1 Bakery

Aloe vera has demonstrated a variety of applications in baked goods. It has the potential to alter the rheology and textural characteristics of food items by acting as a hydrocolloid (Soltanizadeh and Ghiasi-Esfahani, 2015). Aloe vera was added to beef burgers to improve their quality by lowering the amount of contraction, lipid oxidation, heating waste, and fat absorption. Aloe vera was added to low-fat burgers to increase their textural quality and moisture retention (Chopra, 2017). With better bread quality and shelf life, aloe vera fortification increased the rheological characteristics of Barbari dough.

10.2 Beverages

Aloe vera gel’s nutraceutical potential has been investigated as a functional component in the creation of a variety of healthy food items, including yoghurts and drinks (Swami Hulle *et al*., 2014) and (Bornare and Wakiloddin, 2015). Aloe vera-based drinks are accessible on the market. will undoubtedly be advantageous to those who are concerned about their health because they have the ability to function as healthy or functional food products (Sharma *et al*., 2015). Despite having excellent nutritional, antioxidant, and antibacterial qualities, pure aloe vera juice’s sensory qualities are not very pleasant. Aloe vera juices and gel-based soft drink formulations are a superior choice for some more soft drinks based on nutrients and health (Talib *et al*., 2016).

10.3 Confectionary

Aloe vera is used in a variety of desserts as a practical and healthy component, including jelly, chocolate, jams, marmalades, and ice cream (Palve *et al*., 2013). According to studies, researchers investigated the utilization of jelly created by boiling filtered extract free of fibre and adding sugar, citric acid, and pectin. It included aloe vera and pineapple juice. Tried to use this application to prepare chocolate using aloe vera as a supplement. Among the ingredients are sugar, chocolate powder, aloe vera juice, and skim milk powder. used to produce utterly distinctive flavour and texture experiences (Jayabalan and Karthikeyan, 2012). Another jelly-like product is marmalade, which is often produced from citrus fruit juice, peel, and sugar. Aloe vera powder was added to orange jam during preparation, and the jam’s sensory and physical/chemical characteristics were significantly changed (Rashid *et al*., 2014).

10.4 Dairy

Due to its greatest medicinal properties, several dairy products use aloe vera as an ingredient including yoghurt, buttermilk, and others. The yoghurt flavoured with aloe vera gel is an excellent way to get bioactive in a tasty manner (Govindammal *et al*., 2017). When compared to the control, aloe vera-enriched yoghurt had lower fat levels, greater amounts of fibre, and more phytonutrients like steroids, phlorotannin, saponins, and anthraquinones. Yoghurt that has been fortified with aloe vera gel was rated well and it was discovered to be a good probiotic and have a pleasant flavour. A dairy beverage like buttermilk has established strong therapeutic and nutritional effects (Ahlawat *et al*., 2014).

11. Pharmacological action of aloe vera gel

Due to its great demand in the industrial, cosmetics, and medicinal industries, aloe vera is widely grown. Aloe vera has pharmacological actions that are antiarthritic, anti-inflammatory, antibacterial, and hypoglycaemic. Due to its ability to cure burns and wounds, it is also known as the healing plant or the quiet healer (Choi and Chung, 2003).

11.1 Moisturizing and anti-ageing effect

More than (95%) of sunscreen-friendly products made today utilise aloe vera as a key ingredient. This is due to its superior moisturising abilities. Dead skin cells are removed, and the ability of the person to moisturise themselves is improved. By acting cohesively on flaky, superficial epidermal cells as well as by the influence of amino acids, it softens the skin. Aloe vera is a perfect element in cosmetics and dermatological procedures due to its amazing qualities (Surjushe *et al*., 2008).

11.2 Immune system restoration

The antioxidant protein metallothionein, which reuses hydroxy radicals and protects the skin from oxidative damage, is thought to be produced as a result of utilising aloe vera gel. Additionally, it generates the immunosuppressive interleukin IL-10, which inhibits the suppression of the delayed kind of hypersensitivity brought on by UV (Byeon *et al*., 1998).

11.3 Antioxidant effects

Aloe vera has strong anti-oxidant properties. Aloe vera gel included glutathione peroxidase activity, superoxide dismutase enzymes, and

a phenolic anti-oxidant. These elements might be the source of these antioxidant advantages. Aloe vera enhances the blood's quality by facilitating the blood's more effective delivery of nutrients and oxygen to the body's cells (Sharma *et al*., 2014).

11.4 Antidiabetic effects

The ability of aloe vera gel to lower blood sugar is widely established. The results, however, might change depending on how the mucilaginous layer separates from the anthraquinones (Reynolds and Dweck, 1999). In addition to lowering blood sugar levels, it also lowers hepatic transaminases, plasma, muscles, phospholipids, free fatty acids, and triglycerides (Hamman, 2008). An enhancement in glucose homeostasis may be the source of reduced blood sugar levels and anti-oxidant effect, which reduces oxidative damage and peroxide levels (Boudreau, Beland, 2006).

12. Components of aloe vera plants

12.1 Gel

Aloe vera plant flesh is used to create aloe vera gel, a clear, jelly-like material. With a moisture content of 99-99.5%, physical extraction of the fluid layer gel form of the fibrous portion of the pulp yields a (70 %) yield (Femenia *et al*., 1999). Studies show that ground aloe vera gel has a pH between 4.4 and 4.7 and a whole and soluble solids concentration between 0.56 and 0.66 per cent (Wang and Strong, 1995). Numerous papers have detailed the structure and content of different polysaccharides found in the pulp and gel, with varying degrees of success. Most people believe that the long chains of sugar and mannose molecules that make up the polysaccharides in aloe vera gel are what are known as polymannans since there is a lot more mannose in aloe vera gel than glucose (Boudreau *et al*., 2006).

12.2 Latex

Various factors, such as leaf part, age, area on the plant, leaf orientation, and season, have been proven to affect the percentage of specific aloe latex components, according to studies (Chauser-Volfson and Gutterman, 1996). The adaxial area of the leaf showed greater levels than the abaxial part, and young leaves contained more latex components than older leaves. The distal third of leaves had rising levels compared to the bottom third (Gutterman and Chauser-Volfson, 2000). Additionally, the amount of latex constituents in young shoots from the leaf base persists on the plant increased as a result of recurrent damage to the leaf (Gutterman and Chauser-Volfson, 2000). Aloe vera leaf latex is mostly composed of four C-glycosyl components (Saccu *et al*., 2001).

13. Therapeutic applications

Aloe, a well-known plant with significant medicinal value in herbal medicine, has received a lot of attention in the modern medical community due to its various pharmacological properties. Preclinical studies on aloe and its active ingredients were thoroughly explored by researchers, as well as the development of these drugs' use in clinical therapies. The variety of therapeutic applications encompasses several elements (Singab *et al*., 2015).

13.1 Treating skin conditions

Several studies have shown that aloe and its active components offer considerable therapeutic benefits for treating a wide range of chronic skin conditions, including psoriasis, acne, and numerous types of skin inflammation (Miroddi *et al*., 2015).

13.2 Medication of oral conditions

Aloe has the ability to cure periodontitis and other kinds of oral inflammation, according to several pharmacological studies. In addition to treating oral disorders, it can help in the maintenance of oral ecosystems along with the protection of oral and dental mucosal disorders (Nair *et al*., 2016). In the treatment of OLP (Oral lichen planus), aloe vera mouthwash may serve as a suitable alternative to TA (Triamcinolone acetonide) mouthwash. Similarly, a randomized, triple-blinded clinical trial found that radiation-induced mucositis in people with head and neck cancer may be successfully treated with benzylamine mouthwash and aloe mouthwash (Sahebjamee *et al*., 2015).

13.3 Treatment of diabetes

Traditional medicinal substances and aloe vera leaf gel (glyburide and metformin) combined in a clinical trial looking at the hyperlipidaemic. Aloe vera gel's anti-hyperglycaemic properties successfully reduced fasting blood glucose, total cholesterol (TC), and reduced lipoprotein (LDL) readings in patients with type 2 diabetes who had grown resistant to glyburide and metformin without causing any unfavourable side effects. (Huseini *et al*., 2012).

14. Food applications

Aloe vera gel's usage in the food business has drawn attention to increased interest since it may be used as a source of food goods in milk, desserts, drinks, health supplements, as well as other dairy products (Lopez-Cervantes *et al*., 2017; Hassan *et al*., 2018). Numerous health advantages are frequently touted by these drugs, including the ability to reduce the symptoms of ulcers, cancer, diabetes, gastrointestinal disorders, and rheumatoid arthritis (Lopez *et al*., 2017). Aloe vera is also taken orally and used medicinally to cure diarrhoea, cleanse the body, strengthen the immune system, and provide doses of minerals, vitamins, amino acids, and essential minerals. Aloe gel, for instance, has been shown to contain trace quantities of B vitamins, which are frequently only discovered in animal sources (Rodriguez *et al*., 2010). Numerous aloe vera gel or beverage items in cans, in the USA, have made claims that they heal ailments including gout, constipation, arthritis, and a host of others. (Eshun and He, 2004). According to scientific research, aloe vera juice can improve heart function, lower cholesterol and triglyceride levels, reduce the risk of developing cardiovascular disease, control blood sugar, and encourage cell renewal following consumption (Elbandy *et al*., 2014). Aloe sterols from aloe vera could be absorbed and go to peripheral tissues when taken orally. Additionally, they could promote the dermis's collagen deposition to increase, keeping the skin healthy (Tanaka *et al*., 2016). Aloe vera has gained popularity in the poultry farming sector because of its usage in diets for broilers that make use of their effects on the gut microbiota, particular growth rate, and anticoccidial activity. Aloe vera is a natural feed additive that may replace antibiotics to improve the health of chickens, which benefits people as well (Darabighane and Nahashon, 2014).

15. Conclusion

Aloe vera boosts nutritional availability in addition to nutrient value. Aloe vera is a crucial component in much skin friendly over (95 %) of suncream products now available. This is because its exceptional moisturising properties eliminate dead skin cells and enhance the user's capacity to moisturise themselves. Aloe vera has been utilised

as medicine because of its beneficial qualities as an emollient for its anti-inflammatory, digestive aid, antimicrobial, aphrodisiac, antifungal, and antioxidant properties by which many branches of medicine, including homoeopathy, allopathy, and Ayurveda. Aloe vera offers different results, and hence they can be incorporated in making medicinal purposes, different kinds of food supplements such as bakery, and dairy products like yoghurts, ice creams, drinks, and confectionery products. Some others are used as animal feeds, fertilizers, and cosmetic products. Aloe vera is also taken orally and used medicinally to cure diarrhoea, cleanse the body, and strengthen the immune system. Due to its anti-inflammatory, digestive assist, antimicrobial, aphrodisiac, antifungal, and antioxidant characteristics, aloe vera has been utilized in medicine. As a result, the advantages of using aloe vera as a medicine include significant effects on the treatment of digestion issues as well as a wide variety of health benefits.

Conflict of interest

The authors declare no conflicts of interest relevant to this article.

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