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Ankita Bisht
Department of Food Technology, Uttaranchal School of Applied and Life Sciences, Uttaranchal University, Dehradun, India

Ajit Dabral
Department of Food Technology, Uttaranchal School of Applied and Life Sciences, Uttaranchal University, Dehradun, India

Shilpa Sharma
Assistant professor, Uttaranchal School of Applied and Life Sciences, Uttaranchal University, Dehradun, India

Corresponding Author:
Ankita Bisht
Department of Food Technology, Uttaranchal School of Applied and Life Sciences, Uttaranchal University, Dehradun, India

Aloevera (*Aloe barbadensis*)

Ankita Bisht, Ajit Dabral and Shilpa Sharma

Abstract
Aloevera is a significant and effective plant with such a large number of health application and stupefying that hardly any part of human body remains uninfluenced by its healing medicinal use. It acts as a natural fighter against all classes of infection, an important effective anti-oxidant, helps in treating all digestion related problems, heartburns, arthritis, stress, kidney-stone, skins-burns, diabetes, rheumatism, pain, asthma, cancer, AIDS, It also acts as a laxative beauty enhancer and produced that effect on lowering blood sugar level in diabetics and maintain the blood sugar. It is ordinarily known as Barbados or Curaçao Aloe, is a natural medication with a long conventional use in various societies. The main limitation of the current clinical information about aloevera gel is little clinical examinations that often lack rigorous methodology. Few clinical preliminaries are being directed to further evaluate the use of aloevera gel for an variety of disorders, just as to additionally affirm conventional employments of the plant extract.

Keywords: Aloevera, antioxidant, medicinal plant

Introduction

Active Ingredients of aloevera:

More than 75 active ingredients from inner gel have been identified including vitamins, minerals, enzymes, sugars, anthraquinones or phenolic compounds, lignin, saponins, sterols, amino acids, and salicylic acid. Active ingredients aloevera leaf pulp and exudates. (J.H Hamman, 2008) [3] were depicted in Table 1 below:

Table 1: Active ingredients aloevera leaf pulp and exudates.

Class	Compounds
Vitamins	B1, B2, B6, C, A (β β-carotene), choline, folic acid, α α-tocopherol
Enzymes	Alkaline phosphatase, amylase, carboxypeptidase, catalase, bradykinase, cyclooxidase, peroxidase, carboxypeptidase, cyclooxygenase, lipase, oxidase, phosphoenolpyruvate carboxylase, superoxide dismutase
Anthraquinones	Aloe emodin, aloetic acid, anthranol, aloin A and B (or collectively known as barbaloin), isobarbaloin, emodin, ester of cinnamic acid
Inorganic compounds	Calcium, chlorine, chromium, copper, iron, magnesium, manganese, selenium, zinc, potassium, phosphorous, sodium
Carbohydrates	Pure mannan, acetylated mannan, acetylated glucomannan (acemannan), galactan, glucogalactomannan, galactogalacturan, galactoglucoarabinomannan, arabinogalactan, pectic substance, xylan, cellulose
Saccharides	Mannose, glucose, L-rhamnose, aldopentose
Organic compounds and lipids	Arachidonic acid, γ γ-linolenic acid, steroids (campesterol, cholesterol, β β-sitosterol), triglycerides, triterpenoid, gibberellin, lignins, potassium sorbate, salicylic acid, uric acid
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
Nonessential and essential amino acids	Alanine, arginine, aspartic acid, glutamic acid, glycine, histidine, hydroxyproline, isoleucine, leucine, lysine, methionine, phenylalanine, proline, threonine, tyrosine, valine

Table 2: Composition of aloevera gel (Luta and Mc Analley, 2005) [4]

Components	Composition (%db)
Water	98
Total solid content	0.66
Soluble solid	0.56
Phenolic compound	1
Protein	7
Minerals	16
Sugar	17
Lipids	4
Polysaccharides	55

Scientific classification

Table 3: Classification of aloevera

Kingdom	Plantae
Clade	Tracheophytes
Clade	Angiosperm
Clade	Monocots
Order	Asparagales
Family	Asphodelaceae
Subfamily	Asphodeloideae
Genus	*Aloe*
Species	A.vera

Binomial name - Aloe vera

Aloevera products

1. **Aloevera gel:** The aloe gel is flavorless, odorless and clear adhesive substances separated from the fleshy, thick, ragged, green shading leaves of Aloe vera plant. The freshly harvested, undamaged leaves of Aloe vera were gone through filleting procedure to get gel filets within 36 hours of harvesting to save its bioactive components (Grindlay and Reynolds, 1986; Robert, 1997; Lawless and Allen 2000) [6, 7, 5].

Fig 1: Aloevera gel

Aloevera plant is used in large scope production of many medication identified related with skin and it is highly suggested by the dermatologist as this is effective in treatment of all skin inflammation problem, some kind of skin problem probably used to repair burns and used as a moisturizer for hydrating (Richardson *et al*., 2005; Dal' Belo *et al*., 2006) [8, 9].

2. Aloe vera dessert: It is very simple process which involves sorting, grinding, washing, peeling, cutting, cooking in syrup, adding flavor followed by the packing and Pasteurization (Herlina, 2001) [10].

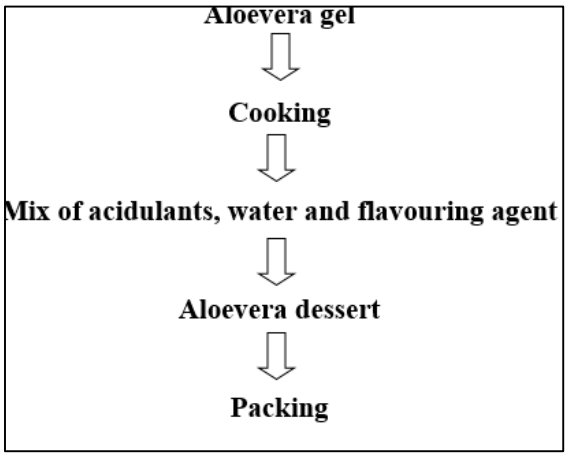

Fig 2: Preparation of Aloevera dessert

3. Aloe vera in dairy industry: Nowdays aloevera gel or juice are used in the different dairy products as ice cream, dahi, yoghurt, lassi and also food products like RTS and edible coatings etc (Keerthi *et al*., 2016) [11]
4. Aloe vera in confectionary product: Aloe vera is used in confectionary items. It includes confections, jams, jellies, chocolates and different desserts which are made of sugar. Different fruit juices are added to get flavor in the items, for example, in jelly; orange juice is used to give orange flavor to the jelly (Anonymous, 2008) [12]. Aloe vera gel with Pineapple fruits juice at a ratio 40:60 gives great nature of jelly with high nutritional value (Palve *et al*., 2013) [14]. All the elements for the production of Aloevera jam were optimized by response surface methodology (Jayabalan and Karthikeyan 2013) [13].

Properties of Aloe vera

1. Burn wound healing effect

Aloe is known as the medication plant. Aloevera has been utilized for conventional clinical purposes in a few cultures**.** (O.M. Elegance *et al*., (2008) In vitro extracts of Aloevera encourage the multiplication of a few cell types. Numerous investigations have demonstrated that treatment with entire Aloevera gel removes brought about quicker medication of wounds. (M. Tarameshloo *et al*., (2012) [16]; C. Aloevera may directly affect the injury medication process in general, which is showed by increment in pace of compression of wound region (S. Subramanian *et al*., (2006) [17] and has affirmed the impact of Aloevera on expanding wound compression and collagen amalgamation. This property is ascribed to the mannose-6-phosphate known to be available in Aloevera gel. (L.Y. Liu *et al*., (2010) [18]

2. Intestinal absorption

Aloe material has been utilized for drug absorption upgrade for drugs with low bioavailability because of broad efflux.(B. Carien *et al*.,(2013) [19] Lactobacillus brevis strains were confined from normally matured Aloevera gel which hindered the development of numerous destructive enteropathogens without limiting most ordinary commensals in the gut and consequently were named POAL (Probiotics Originating from Aloe Leaf) strains; these and show discriminative protection from a wide scope of anti-microbial.

3. Antioxidant effect

Aloevera contains significant measures of antioxidant including α-tocopherol (nutrient E), carotenoids, ascorbic

corrosive (nutrient C), flavonoids, and tannins. (J.H. Hamman, (2008) [3] and it has been recommended that antioxidant action might be a significant property of plant medications utilized in treatment of different illnesses. Topical A. saponaria treatment has indicated antinociceptive and anti-inflammatory impacts in ultraviolet B-induced from the sun model through its antioxidant components segments present in gel. (M.A. Silva *et al*., (2014)

4. Anticancer activity

Aloin, an anthraquinone being a characteristic compound and the principle element of Aloe, has been recorded for its striking likely remedial choices in disease, wherein it demonstrated chemo protective impacts against 1,2-dimethylhydrazine-initiated preneoplastic sores in the colon of Wistar rats. (O.O. Hamiza *et al*., (2014) [22] Recent reports have indicated that AE has antiproliferation consequences for certain sorts of malignant growth cells, for example, lung, squamous, glioma, and neuroectodermal disease cell. (M.L. Lin *et al*., (2011) [23].

Conculsion

Plant exhibits many pharmacological activities such antioxidant, antimicrobial, immune boosting, antitumor, hypoglycemic, hypolipidemic, wound healing, and antidiabetic. It is an important part of the medicinal purpose, aloevera has different health benefits such as it protects skin against damage or inflammation, wound healing and it is approved in clinical trial data show its effect for lowering LDL and the increase in the HDL, blood glucose level down, etc. It is scientifically proves that aloevera gel is also safe for the external use, the leaf of aloevera contain the biological components which need careful handling and harvesting. It is inferred that we can mixed aloevera with different other supplement to improve the nutritive nature of the food item, for example, jelly, dessert, fruit juices, curd, etc.

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