

NUTRITIVE VALUE EVALUATION OF ALOE VERA BASED PRODUCTS

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ABSTRACT

Aloe vera is the oldest medicinal plant ever known and the most applied medicinal plant worldwide. The first written records about the use of Aloe vera were found on over 6,000 years old clay tablets found in Mesopotamia. In recent years, considerable progress has been made in pharmacological research on Aloe vera and there has appeared in the market some aloe food, medicine, health care products and cosmetics, which seems to be very popular. Hence, the study was taken up to formulate food products like jams, laddus by adding Aloe vera. The samples prepared were analyzed for nutritional constituents using standard procedures (AOAC, 1995). Aloe vera Laddus contained 34.21%, 39.52% and 45.91% moisture on D₁, D₂ and D₃ respectively. The mean scores of protein content in samples of laddus were 6.02%, 5.06% and 4.11% on D₁, D₂ and D₃ respectively. The mean score of Aloe veraladdus for fat were 17.82%, 16.40% and 15.28% on D₁, D₂ and D₃ respectively. The mean score of carbohydrate content in Aloe vera laddus were 23.23%, 22.15% and 20.12% on D₁, D₂ and D₃ respectively. The mean score of crude fibre content in Aloe vera laddus were 7.49%, 6.42% and 5.32% on D₁, D₂ and D₃ respectively. Aloe vera jam contained 45.93%, 45.95% and 45.98% moisture on D₁, D₂ and D₃ respectively. The mean scores of protein content in samples of jam were 5.03%, 5.06% and 5.09% on D₁, D₂ and D₃ respectively. The mean score of fat content in Aloe vera jam was 3.2% on D₁, D₂ and D₃. The mean score of carbohydrate content in Aloe vera jam was 25.89%, 27.83% and 27.90% on D₁, D₂ and D₃ respectively. The mean score of crude fibre content in Aloe vera jam was 12.7%, 12.60% and 12.55% on D₁, D₂ and D₃ respectively. Inclusion of such products in the diet of an individual can help in providing nourishment as well as the therapeutic benefits of Aloe, especially for its laxative and hypoglycaemic effect.

Keywords: Aloe vera, Nutritive value, Laxative and hypoglycaemic effect

INTRODUCTION

Medicinal plants have been used to treat ailments and promote health, since before recorded history. *Aloe vera* is only now coming of age. *Aloe vera* has a great value in the society. *Aloe vera* is most commonly used in making cosmetics and some medicines. But very few attempts have been made to process *Aloe vera* into food products. The most available product of the *Aloe vera* available in India is *Aloe vera* Juice. Hence, the study was taken up to make food products of *Aloe vera* and make it available. *Aloe vera* has very good nutritional composition. It contains 20 of the 22 Amino acids required for good nutrition. *Aloe vera* has shown to contain 13 of the 17 minerals required in the body, namely, calcium, potassium, phosphorus, sodium, chlorine, aluminium, magnesium, manganese, selenium, silicon, zinc and cobalt. It has been proved that aloe vera has more than 160 chemical compositions, among which 72 are functional, such as anthraquinone compounds, polysaccharides, glucoside, lipid, organic acids, enzymes, amino acids, antibiotics etc.

The present study was carried out in the Department of Food Science and Nutrition, M.A.B. College of Home Science, C.S. Azad University of Agriculture and Technology, Kanpur.

OBJECTIVES OF THE STUDY

To formulate the products namely jams and laddus using *Aloe vera*.

To conduct the sensory evaluation of the products formulated and to assess their nutritive value on 3rd, 6th and 9th day.

RESEARCH METHODOLOGY

Development of products

Preparation of *Aloe vera* laddus: *Aloe vera* laddus were prepared using rava.

Method:

Aloe vera pulp was taken and roasted on low medium flame in melted ghee till brown colour appear.

Sugar, dry fruits and roasted rava were added in it.

Balls were made into desired size.

Stored in air tight container.

2. Preparation of *Aloe vera* jam:

Method:

Aloe vera pulp was extracted and soaked in the solution of citric acid for 15 minutes.

Aloe vera pulp was crushed using blender.

Sugar and jelly powder was added to them and cooked till the texture softened.

The mixture was allowed to stand for half an hour.

Then the mixture was cooked on quick fire. Continuous stirring was followed to avoid burning.

The mass was cooked until desired consistency was obtained.

The end point was tested by drop test.

Jam was filled in dry sterilized wide mouth bottle while hot.

Nutritional Evaluation of Prepared Products

The prepared samples were analysed for nutritive value as moisture, protein, fat, carbohydrate, fiber and ash using standard procedure.

Statistical analysis

The data obtained in the present investigation were tabulated statistically by using CRD (Completely Randomized Design).

RESEARCH FINDINGS AND SUGGESTION

1. Mean score of nutritional evaluation of *Aloe vera* laddus:

The data of mean score were tabulated and analyzed statistically; results and discussion has been presented in Table 1.

Moisture Profile:

It is evident from the table 1 that *Aloe vera* Laddus contain 34.21%, 39.52% and 45.91% moisture on D₁, D₂ and D₃ respectively. Moisture content is important for the shelf life study.

Protein Profile:

The mean scores of protein content in samples of laddus were 6.02%, 5.06% and 4.11% on D₁, D₂ and D₃ respectively as shown in table 1. Table shows that the protein content of the product was decreased as the storage days were increased.

**Table 1: Mean Score of nutritional evaluation of *Aloe vera* Laddus.
(In per 100g)**

S. No.	Study Group Days	Nutrients					
		Moisture (%)	Protein (%)	Fat (%)	Carbohydrate (%)	Crude Fibre (%)	Total Ash (%)
1.	D1	34.21	6.02	17.82	23.23	7.49	11.23
2.	D2	39.52	5.06	16.40	22.15	6.42	10.45
3.	D3	45.91	4.11	15.28	20.12	5.32	9.26
Mean		39.88	5.06	16.50	21.83	6.41	10.31

NOTE: D₁: 3rd day

D₂: 6th day

D₃: 9th day

Fat Profile:

Table 1 shows that the mean score of *Aloe vera* laddus for Fat were 17.82%, 16.40% and 15.28% on D₁, D₂ and D₃ respectively. A perusal data presented in the table indicates that the fat content of laddus was decreased slightly after different days.

Carbohydrate Profile:

Table 1 indicates that the mean score of carbohydrate content in *Aloe vera* laddus were 23.23%, 22.15% and 20.12% on D₁, D₂ and D₃ respectively. Table reveals that the carbohydrate content of laddus were decreased after different days.

Crude Fibre Profile:

It is evident from the table 1 that the mean score of crude fibre content in *Aloe vera* laddus were 7.49%, 6.42% and 5.32% on D₁, D₂ and D₃ respectively. The above table shows that the *Aloe vera* laddus were non significant at 5% critical difference.

Total Ash Profile:

Table 1 shows that mean score of Table indicates that there were slight differences in total ash after different storage days.

2. Mean score of nutritional evaluation of Aloe vera jam:

The data of mean score were tabulated and analyzed statistically; results and discussion has been presented in Table 2.

Moisture Profile:

It is evident from the table 2 that *Aloe vera* jam contains 45.93%, 45.95% and 45.98% moisture on D₁, D₂ and D₃ respectively. Moisture content is important for the shelf life study.

Protein Profile:

The mean scores of protein content in samples of jam were 5.03%, 5.06% and 5.09% on D₁, D₂ and D₃ respectively as shown in table 2. Table shows that the protein content of the product was increased slightly as the storage days were increased.

**Table 2: Mean Score of nutritional evaluation of Aloe vera Jam.
(In per 100g)**

S. No.	Study Group Days	Nutrients					
		Moisture (%)	Protein (%)	Fat (%)	Carbohydrate (%)	Crude Fibre (%)	Total Ash (%)
1.	D1	45.93	5.03	3.2	25.89	12.70	5.35
2.	D2	45.95	5.06	3.2	27.83	12.60	5.32
3.	D3	45.98	5.09	3.2	27.90	12.55	5.28
Mean+ S.D.		45.95	5.06	3.2	27.21	12.61	5.31

NOTE: D₁: 3rd day D₂: 6th day D₃: 9th day

Fat Profile:

Table 2 shows that the mean score of *Aloe vera* jam was 3.2% on D₁, D₂ and D₃. A perusal data presented in the table indicates that the fat content of jam had no change after different days.

Carbohydrate Profile:

Table 2 indicates that the mean score of carbohydrate content in Aloe vera jam was 25.89%, 27.83% and 27.90% on D₁, D₂ and D₃ respectively. Table reveals that the carbohydrate content of jam was increased after different days.

Crude Fibre Profile:

It is evident from the table 2 that the mean score of crude fibre content in Aloe vera jam was 12.7%, 12.60% and 12.55% on D₁, D₂ and D₃ respectively. The table 2 shows that the Aloe vera jam was decreased after storage days.

Total Ash Profile:

Table 2 shows that mean score of total ash content in Aloe vera jam were 5.35%, 5.32% and 5.28% on D₁, D₂ and D₃ respectively. Table indicates that there were slight differences in total ash after different storage days.

CONCLUSION:

On the whole, *Aloe vera* is a nutritious plant with various health benefits. Aloe vera products are safe for consumption and the shelf life of the product is excellent. The inclusion of *Aloe vera* products in the diet of an individual can add to the diet's nutritive and therapeutic value. It plays an important role in gerontology and rejuvenation. *Aloe Vera* is full of medicinal properties & it is effective in treating various body ailments. Hence measures should be taken to create awareness about aloe vera products among people to include it in their diet.

REFERENCES:

- Choo, C. (2003). *Vital Vera, Asia Pacific Food Industry*. 15 (60) : 36-37.
- Gautam, S. and Awasthi, P. (2007). Nutrient composition and physiochemical characteristics of *Aloe vera* (*Aloe barbadensis*) powder. *J. Food Sci. Technol.* 44 (2) : 224-225.
- Neall, B. (2004). Aloe's new role in functional foods. *Food Review*. 31 (2) : 24-25.
- Paul, S. (2003). *Aloe vera* : A review of chemical constituents. *J. Pharm. Pharmacol.* 58 : 30-35.