

Processing And Organoleptic Evaluation of Instant Chia Seed Soup Powder

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Abstract: - The use of chia seeds in contemporary diets is growing. Twenty members of the department's food and nutrition team sampled soup. Due to its rich nutritional profile and the thousands of years that chia seeds have been used for therapeutic purposes, chia has attracted significant interest in the present research on the health-promoting aspects of food. Chia seeds have been linked to a variety of therapeutic outcomes, with special emphasis on their beneficial impact on hypertension, cardiovascular disorders, and their antidiabetic and anti-inflammatory properties. Extracting chia dietary fibre gum fractions can be utilised as a supplement to the change in a variety of physicochemical aspects of food systems, such as texture, consistency, stability, and viscosity. Currently, chia seeds are frequently consumed for a number of health benefits, namely in maintaining strong blood lipid levels due to the presence of phenols as well as omega 3 and omega 6 oils. Dietary fibre, protein, lipids, carbohydrates, ash, minerals, vitamins, and dry matter are all present in significant concentrations in chia seeds. Moreover, it contains a lot of antioxidants. Gluten-free chia seeds are good for celiac disease sufferers because they don't contain any gluten. Niacin, folic acid, thiamine, and riboflavin are all abundant in the seeds. Because it takes little time to prepare, instant chia seed soup powder is regarded as one of the essential fast ready meals. So, the purpose of the current study was to look into the processing of instant chia seed soup powder and how that affected its nutritional value.

Key Words: - *Chia seed soup powder, blanching, dehydration, therapeutic purpose, antioxidants, omega 3 and omega 6 oils.*

I. INTRODUCTION

Chia was referred to as "running food" at that time since it was thought to increase stamina and vitality. The demand for functional foods with several health advantages has increased in recent years as public health awareness spreads across the globe. The use of therapeutic foods to prevent ailments including diabetes, obesity, and cardiovascular issues is rapidly gaining popularity worldwide. It was considered one of the pre-Columbian Americas' four staple foods.

Because of its many healthful nutritional qualities, chia is now being reintroduced into western diets.

Over the past few years, thanks to the surge of healthy lifestyle changes, functional foods have attracted enormous attention on a global scale. The rising prevalence of cardiovascular diseases (CVDs), high blood pressure, obesity, diabetes, and other linked illnesses is one of the factors driving interest in changing to a healthier lifestyle. According to Ayerza (2002), these problems are frequently brought on by a sedentary lifestyle and a diet high in saturated fatty acids (SFAs), which are found in many foods. Chia seeds are getting attention again as a superfood in recent years due to its alleged nutritional benefits. *Salvia hispanica* L., also known as chia, is an annual herbaceous plant that is a member of the Lamiaceae family. Omega-3 fatty acids, oil, protein, dietary fibre, minerals, and polyphenols are all in great abundance in chia seeds, adding to its nutritional significance. The Aztecs of ancient Mexico for generations cultivated the chia plant (*Salvia hispanica* L.), a desert plant.

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Together with maize, chia seeds were an extremely significant crop for the Aztecs because they used them in their daily diet. The name "chia" comes from the Aztec word "chian," which means greasy. The name of the current Mexican state of Chiapas, where the chia is produced in the greatest quantity, is partially derived from the term "chia". Chia seeds are tiny, flat, oval, and range in size from 2.0 to 2.5 mm in length, 1.2 to 1.5 mm in width, and 0.8 to 1.0 mm in thickness. This seed is available in a variety of hues, including dark brown, black, and occasionally grey or white. It is an annual plant that blooms in the summer and grows to a height of approximately one metre. The hermaphrodite flowers have reverse petiolate, serrated leaves that are 4-8 cm long and 3-5 cm broad. With good salt and acid tolerance, plants may thrive in a variety of well-drained clay and sandy soils. Chia seeds have high levels of dietary fibre (18–30%), protein (15–25%), lipids (30–33%), carbohydrate (26–41%), ash (4–5%), minerals, and vitamins, as well as dry matter (90–93%). Antioxidants are abundant in it as well. Chia seed was found to be devoid of mycotoxins and to contain heavy metals in amounts that are safe for consumption and do not exceed the maximum metal values for food safety.

The absence of gluten is another important quality of chia seeds. Chia seeds have an oil content of up to 39% and up to 68% -linolenic acid, which is the highest known concentration. Chia seeds are rich in polyunsaturated omega-3 fatty acids, which can reduce cholesterol levels in the body, reduce inflammation, and improve cognitive function. Chia contains a high concentration of polyphenols made from caffeine that work as antioxidants to shield the body against free radicals, ageing, and degenerative diseases. Furthermore, chia has significant concentrations of carbohydrate-based dietary fibre, which is linked to a decrease in inflammation, cholesterol, and irregular bowel movements. Because of its superior phytochemical composition and outstanding nutritional and functional qualities, chia is becoming more and more popular all over the world. Chia is now referred to as "the seed of the 21st century," "new gold," or "super nutrient" due to the acknowledgment of its nutraceutical properties. By virtue of their hypotensive, hypoglycaemic, antibacterial, and immunostimulatory properties, the contents of chia seeds are attributed a favourable influence on the enhancement of the blood lipid profile, according to recent studies. Minerals including calcium, magnesium, and phosphorus, which are known to be good for bones, are abundant in chia seeds.

When compared to the same amount of milk, a 25g portion of chia seeds provides a large amount of calcium at about 158mg. This article's objective is to give current data on the possible use of chia seeds in the food business, with a focus on their chemical make-up, health-improving qualities, and legal frameworks that govern their usage in food production. Chia seeds can be used to make tamales, tortillas, and a number of other Chiantoles, or Aztec-style drinks. Chia is frequently consumed as a salad made from chia sprouts, in beverages, cereals, and salad dressing made from the seed, or it is eaten raw. The current study was therefore conducted to investigate processing and the impact of nutritional quality of instant chia seed soup powder.

II. MATERIALS AND METHOD

This section contains the preparation and processing of the instant chia soup powder collected from various places of Lucknow, Uttar Pradesh.

2.1 Tools

Dehydrator, Mixer Grinder, Weighing machine, Aluminium Tray, Measuring Spoon, Gas Stove, Pan, Plates, Knife, muslin cloth.

2.2 Collection of Raw Ingredients:

Chia Seeds, corn flour, black pepper, seasoning, salt collected from grocery shop located in Shaheed Nagar market, Lucknow, Uttar Pradesh. All vegetables Carrot, Garlic, Green pie, Ginger, Red Chili, Onion and Tomato are purchased from local market of south city Lucknow, Uttar Pradesh.

2.3 Processing of Instant Chia Soup Powder

The study was conducted at School of Home Science Department, Babasaheb Bhimrao Ambedkar University, Central University, Vidiya Vihar Raibareli, Lucknow 226025. Arrange all the ingredients such as chia seeds, carrot, onion, peas, garlic, ginger, tomato, red chili, brought from the Lucknow market than blanch some vegetables such as carrot, onion, peas, tomato. Then all products went through blanch and dehydration process; ingredients such as carrot, peas, tomatoes blanched before dehydration while onion, garlic, ginger, red chili directly dehydrate after mincing them into small pieces to increase the surface area in the dehydrator tray . Here chia seed only gone through the process of roasting.

After completion of blanching, dehydration and roasting process of all ingredients, powder of chia seed soup prepared by combination of each ingredients into right proportion by grinding them.

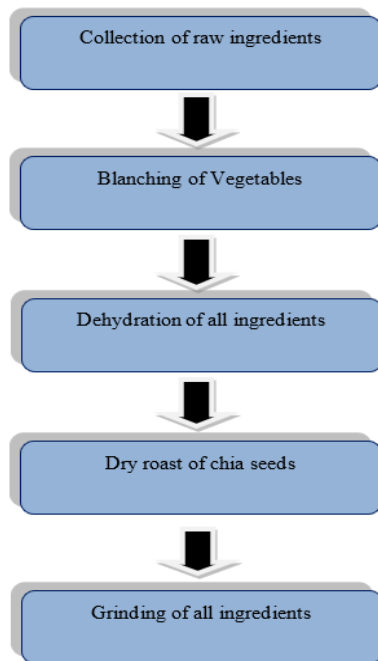


Fig.1. Flow chart of processing of Instant chia soup powder.

2.4 Preparation of Instant Chia Soup Powder

Arrange all the ingredients such as chia seeds, carrot, onion, peas, garlic, ginger, tomato, red chili, brought from the Lucknow Market. Then all vegetables gone through the process of peeling and cutting into small pieces before the blanching. Then all vegetables boiled at certain degree celsius for given period of time after that immediately soaked into cold water which helps in the nutritive value remains same without any loss where, carrot, peas and tomato kept at 95°C for 5 minutes, 85°C for 1 minutes and 75°C for 5 minutes respectively. As soon as the process of blanching complete then all ingredients (carrot, peas, tomato) rinse to dry it into dehydrator at 60°C for 12-24 hrs while thin slices of onion, garlic, red chili and ginger flat in a single layer on the aluminium tray at 60°C for 4 to 6 hours, 60°C for 2 hours, 60°C for 2-4 hours respectively. Then the certain amount of chia seed was roasted for 5 to 6 minutes; after that cooled chia seed used to grind which results into fine powder. Once all ingredients cool down then all mix together

in right proportion such as spices, seasoning, black pepper, corn flour and salt.

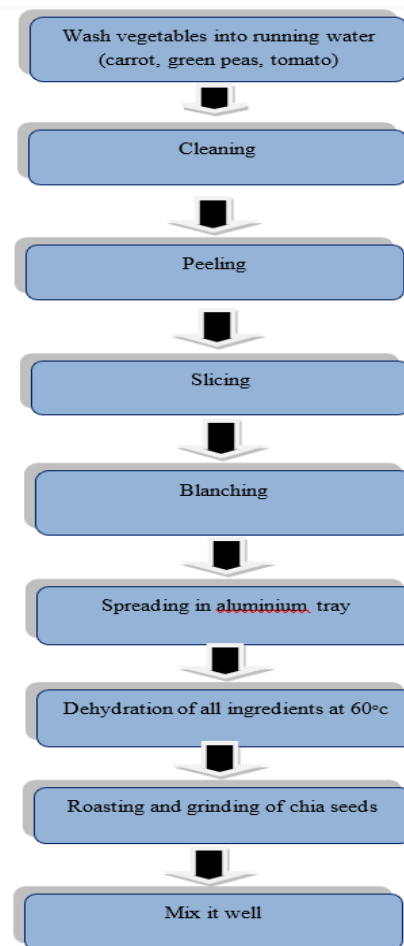


Fig.2. Flow chart of preparation of Instant chia soup powder.

III. RESULT AND DISCUSSION

3.1 Sensory Evaluation of Instant Chia Soup Powder

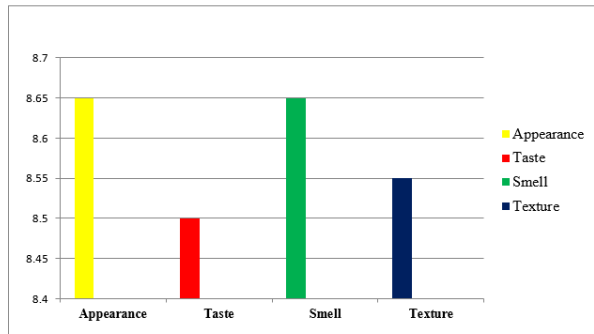
Soup samples were performed by 20 members of Food and Nutrition Department, Student of Food and Nutrition, Food Science & Technology and Human Development & Family Studies Department, Babasaheb Bhimrao Ambedkar University, Lucknow.

Ten grams of dry soup mix were added to 150 ml of slightly hot water and stirred slowly until it boils. After 5 minutes of boiling, get ready to drink soup. Equal amount of soup was served to the panelist with evaluation form. Palatability test colour, flavor, taste, appearance, consistency and overall acceptability for soup sample were carried out.

Table.1. Sensory scores of Instant Chia Soup Powder on the basis of Acceptance

Panelist Member	Appearance/ Colour	Taste/ Flavour	Smell/ Odour	Texture/ Mouth feel
1	8	9	9	9
2	9	9	9	9
3	9	9	9	8
4	9	8	9	8
5	9	8	8	9
6	9	7	8	8
7	9	9	9	8
8	8	8	8	8
9	8	8	8	9
10	9	9	9	9
11	9	9	8	7
12	9	9	9	9
13	8	8	8	8
14	8	8	9	8
15	9	9	9	9
16	9	9	9	9
17	8	9	8	9
18	8	9	9	9
19	9	8	9	9
20	9	8	9	9
TOTAL	173	170	173	171
AVERAGE	8.65	8.5	8.65	8.55

Sensory Evaluation of Instant Chia Soup Powder



IV. CONCLUSION

Instant Soup is considered one of the important fast ready meals as it requires short time for preparation. In the current study, chia seeds were used to boost omega-3 fatty acids, oil, protein, dietary fibre, minerals, and polyphenols in produced soup preparations. The sensory qualities were also enhanced by roasting and dehydrating. These soup items can be suggested as nutritious substitutes for fast food, which can worsen malnutrition.

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