

*Short communication*

## **Simplified process for the production of sesame seed (*Sesamum indicum* L) butter and its nutritional profile**

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**Abstract:** A simple process was developed for making sesame seed butter and characterized for its nutritional profile. The seed paste was prepared from white sesame seeds. The product was light ivory white in colour and possessed a typical sesame flavour. The data indicated that it contained 26% protein, 51% fat, 18% total carbohydrates and 4% crude fibre. It was also a rich source of some minerals like calcium, phosphorus, magnesium, potassium and zinc and devoid of harmful pathogens. It can be kept in plastic/glass jars under refrigerated conditions until further use. The paste may be readily used for all culinary purposes.

**Keywords:** food processing, confectionery, nutritional profile, India

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### **Introduction**

Sesame seeds are thought to be one of the oldest condiments and are so appealing that they have become an integral part of the various cuisines throughout the world. It is found growing in most tropical, sub tropical and southern temperate areas of the world. The seeds contain about 20% protein and 50% fat of which 35% is monounsaturated fatty acids and 44% polyunsaturated fatty acids. Before seeds were appreciated for their ability to add nutty flavour or garnish foods, they were primarily used for oil and wine. After the extraction of oil, the cake is mostly used for livestock feed or often as manure. However, Gandhi and Srivastava (2007) developed a process for making protein isolates from the defatted sesame flour that contained more than 90% proteins with all functional properties. The seed is also used for making imitation butter, which is traditionally known as Tahini in the Middle East, where it is a major ingredient in cooking. It contains considerable amounts of protein, fat, fibre, vitamin B including folic acid and certain minerals. However, the data is not well documented yet. Hence the purpose of the present

investigation is to develop a simple process for making sesame seed butter and to establish its quality attributes.

## **Materials and Methods**

### ***Seed***

White sesame seeds were procured from a local market. They were thoroughly cleaned to free them from dirt, foreign matter, stubble, mould, rot and other infestations. They were then stored in airtight containers until further use.

### ***Preparation of seed butter***

The seeds were soaked in water with a seed to water ratio of 1:20(w/v) for 24 hours at ambient temperature. All the floating seeds and foreign matter were scooped off and the submerged seeds were rinsed with fresh water twice. They were crushed to separate the bran from the kernels. The crushed seeds were put into salt water (common salt, 1%) where the bran was submerged and the kernels were floated. They were then skimmed off to the surface and later dried completely and toasted. Finally they were ground in a kitchen mixer at low speed with adequate amounts of sesame oil and salt to taste.

### ***Analytical methods***

The moisture, crude protein, crude fat, total carbohydrates, crude fibre and minerals were analyzed using AOAC (1990) methods. The microbial counts were determined using the Standard Plate Count Technique (APHA, 1984). All the chemicals used were of analytical grade and the experiments were conducted in triplicate and the mean values were computed for calculations.

## **Results and Discussion**

### ***Proximate Composition***

The sesame seed butter was analyzed for crude protein, crude fat, total carbohydrates, crude fibre, along with the minerals and the microbial load. The results are summarized in Table 1. The data indicated that the moisture content was 1%(wb) and the protein, fat, total carbohydrates and crude fibre contents were 26%, 51%, 18% and 4% respectively. The calcium, phosphorus, zinc, magnesium and potassium contents (mg/100g) were 141, 790, 10.4, 353 and 459 respectively. The product was devoid of harmful pathogens.

### ***Physical properties***

The paste so prepared was uniformly light ivory white in colour and possessed a typical sesame flavour. It was free from musty and other objectionable odors. The texture was smooth, dry and it formed a fluid paste.

**Shelf life**

The paste was kept in plastic/glass jars under refrigerated conditions until further use. The keeping quality was good for six months and the product should be used within a month after opening the seal.

Table 1. Proximate composition and microbial status of sesame seed butter.

<b>Characteristics</b>	<b>Values</b>
Moisture, %wb	1.0
Crude Protein,%(Nx6.25)	26.0
Crude Fat, %	51.0
Total Carbohydrates, %	18.0
Crude Fibre, %	4.0
<b>Minerals, mg/100g</b>	
Calcium	141.0
Phosphorus	790.0
Sodium	1.0
Zinc	10.4
Copper	1.5
Iron	6.4
Magnesium	353.0
Potassium	459.0
<b>Microbial Load</b>	
Total bacterial counts, x103	1.3
Total fungal counts, x103	0.8
<i>E.coli</i>	Nil
Salmonella	Nil
Staphylococcus	Nil

**Uses**

This paste may be used readily for culinary purposes and for making various other traditional recipes like humms/ bab ghanoush/halvah.

**Conclusion**

A simple process was developed for making the sesame seed butter and its physico-chemical characteristics were examined. The product is a better substitute for peanut butter to which many people are allergic.

**References:**

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