

## **Consumer Preference and Proximate Analysis of Bamboo Shoot Siomai**

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### **Abstract**

This study aimed to analyse the proximate contents of the product in terms of crude protein, total fat, carbohydrate, moisture content and energy and to assess the consumer acceptability of the generally acceptable product of bamboo shoot siomai made by Luna and Alayon (2017). Experimental method of research was used. Testing of the sample was done in three trials. Samples of the generally acceptable product that was developed by Luna and Alayon (2017) was used. Each sample was then subjected for proximate analysis such as ash content, moisture content, crude protein and total fat. For consumer testing, 100 consumer panels was requested to taste the product in Mambusao Public Market, Mambusao, Capiz during market day schedule. Samples for proximate analysis were brought to Department of Science and Technology, Region VI, Chemical and Microbiology Department and results of the consumer test were tabulated and analysed using the mean and percentage. Bamboo shoot siomai has 68.5g moisture, 1.37g ash, 7.58 g crude protein, 3.0 g total fat, 19.5 g carbohydrate and has an energy of 136 Kcal/100g. Sixty-three percent of the consumers liked the siomai with 75% pork and 25% bamboo shoot while thirty-seven percent of the consumers like the siomai with 100% pork.

*Keywords:* nutrition content, bamboo shoot, consumer panel

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## Introduction

Siomai is similar to a meatball made of shrimp or pork or a combination of these, wrapped in a thin pasta like wrapper called the molo wrapper. This is steamed for several minutes to be cooked and is always served with soy sauce, chili garlic and calamansi (Shamai talk.).

Siomai or Shumai is a traditional Chinese dumpling served in dim sum. In China, there are two varieties of this dish which are the Cantonese and Jiangnan. The difference between the two varieties is that the Cantonese is made out of pork, shrimp, and black mushroom covered in a thin sheet of dough while the Jiangnan region version is quite different as the dough is larger and tougher than the Cantonese version and the filling is made out of marinated pork pieces in glutinous rice and steamed with some lard, the size is also bigger compared to the counterpart. (Raymund, 2014).

According to a study conducted by Chongtan, Bhist and Haorongbam from Punjab University in India, bamboo shoot are rich in various nutrients. It has low caloric content, low sugar content, negligible amount of fat, and source of protein, vitamins and minerals, high in dietary fiber, appetizing effects. It helps in losing weight, heart health, controls cholesterol, fights cancer, strengthen the immune system, high supply of dietary fibers, anti-inflammatory properties and uterotonic properties (Nagdeve, 2019).

Bamboo shoots are low in fat and calories. One cup of half-inch long slices contains a mere 14 calories and half a gram of fat. The shoots are good source of fiber. The same serving size provides about 2.5 grams of fiber; which is approximately 10% of the recommended amount needed in a day. Fiber helps keep cholesterol levels in check and plays a role in preventing colon cancer. Bamboo shoots are also a good source of potassium one cup provides 640 milligrams, which is a heart-healthy mineral. It helps maintain normal blood pressure and a steady heartbeat (Nagdeve, 2019).

Bamboo shoots are considered as one of the useful health foods because of their rich contents of proteins, carbohydrates, vitamins, fibres, and minerals and very low fat (Nongdam and Tikendra, 2014). Freshly collected bamboo shoots have good amount of thiamine, niacin, vitamin A, vitamin B6, and vitamin E (Visuphaka, 1985 as cited by Nongdam and Tikendra, 2014). Also the bamboo shoot based diets are rich source of dietary fibres and phytosterols and less cholesterol contents which make them one of the popular natural health foods. Bamboo shoots contain generally tyrosine, arginine histidine, and leucine as amino acids. The presence of tyrosine facilitates biochemical metabolism of our body as it is a major constituent of adrenals which are precursors for adrenaline, necessary for active body metabolic activities. It also plays important role in function of thyroid and pituitary glands which are involved in producing and regulating hormones in human body (Nongdam and Tikendra, 2014).

Bamboo shoots grown in Masha area, Ethiopia were studied for nutrient, mineral and bioactive compositions using standard analytical methods. The nutrient composition involves the Moisture content 2.98%, Ash content 14.41%, crude lipid 2.25%, crude fiber 18.81%, crude protein 8.04%, and Carbohydrate 73.14%. Besides to this, the mineral composition of bamboo shoots were potassium 6324.101mg/100g), sodium 19.164mg/100g, calcium 60.449mg/100g, magnesium 118.75mg/100g, copper 1.429mg/100g, zinc 5.647mg/100g, iron 13.594mg/100g and manganese 2.895mg/100g (Awol, 2016).

### **Methodology**

The study used experimental and descriptive type of research. Each sample was then subjected for proximate analysis such as ash content, moisture content, crude protein, and total fat.

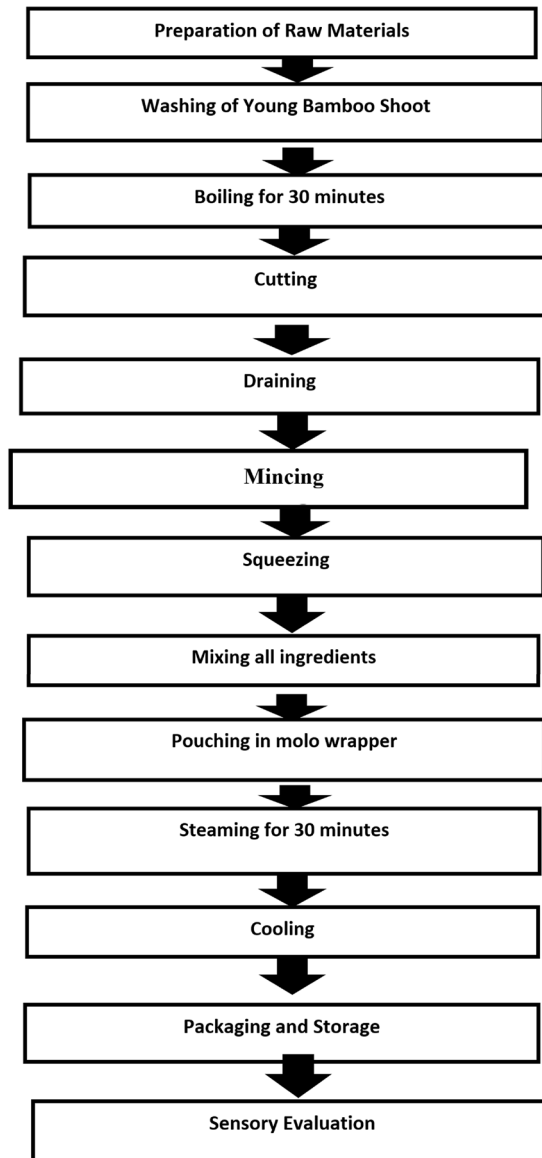
### **Materials**

The materials needed in the preparation of bamboo shoot siomai were the following: young bamboo shoots, molo wrapper, ground pork, eggs, all-purpose flour, measuring cups, measuring spoons, mortar and pestle, chopping board, knife, bowl, grinder, and steamer.

A 500-gram sample was placed in sterile plastic container (Ziploc), labelled and weighed and was frozen so that on the next day, it was transferred to thermochest filled with ice and was transported to Department of Science and Technology, Region VI, Chemical and Microbiology Department for proximate analysis. A thermometer was brought to monitor the temperature while transporting the sample. Results was retrieved two weeks after the submission of the sample. Moisture content determination was through moisture by loss drying, ash content was done by direct method, crude protein was done Kjeldahl Method using block digestion and steam distillation, total fat was determined through acid hydrolysis and solvent extraction using Soxtec system HT2 and petroleum ether as solvent, carbohydrate was computed by difference and energy in kilocalories per 100 gram is the sum of protein, fat and carbohydrate multiplied by the general Atwater factors 4-9-4, respectively.

For consumer testing, 100 consumer panels was requested to taste the product in Mambusao Public Market, Mambusao, Capiz during market day schedule.

### Conceptual Framework



### Analysis/Procedure

The results retrieved from the Department of Science and Technology, Region VI, Chemical and Microbiology Department and from the consumer test were tabulated and analysed using the means and percentages.

## Results and Discussion

### Proximate Analysis

Table 1.0 shows that in every 100g sample of bamboo shoot siomai, it has 68.5g moisture, 1.37g ash, 7.58 g crude protein, 3.0 g total fat, 19.5 g carbohydrate and has an energy of 136 Kcal/100g.

Table 1.0 Proximate Analysis of Bamboo Shoot Siomai

Sample	Analysis	Result (g/100g)
Bamboo Shoot Siomai	Moisture	68.5
	Ash	1.37
	Crude Protein	7.58
	Total Fat	3.08
	Carbohydrate	19.5
	Energy	136 Kcal/100g

### Consumer Testing

The consumer acceptability of bamboo shoot siomai is shown in Table 2.0. It revealed that sixty-three percent of the consumers liked the siomai with 75% pork and 25% bamboo shoot while thirty-seven percent of the consumers like the siomai with 100% pork. Thirty-seven percent disliked the siomai with 75% pork and 25% bamboo shoot while sixty-three percent of the consumers disliked the siomai with 100% pork.

Table 2.0 Consumer testing of Siomai with Bamboo shoot

Sample	Liked (%)	Disliked (%)	Total
Siomai with 75% pork and 25% bamboo shoot	63	37	100
Siomai with 100% pork	37	63	100

### Conclusions

Bamboo shoot siomai has 68.5g moisture, 1.37g ash, 7.58 g crude protein, 3.0 g total fat, 19.5 g carbohydrate and has an energy of 136 Kcal/100g. Sixty-three percent of the consumers liked the siomai with 75% pork and 25% bamboo shoot while thirty-seven percent of the consumers like the siomai with 100% pork.

### **Recommendations**

Researcher recommends conduct of study comparing proximate analysis of cooked bamboo shoot siomai with different boiling time and be then subjected for consumer testing as it will be combined in making siomai. Likewise, consumer testing should be wider in scope.

### **References**

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