

## Research Article

# Analysis of Ash Content of Red Salak Bean Coffee (*Salacca edulis*) Based on Duration of Roasting Length

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**Abstract.**

Maluku province, Seram district in the west, found a strawberry. Fruit is a tropical and horticultural commodity with a fairly high availability. Protein, ash, fat, and water are the closest analysis, carbohydrates as well as fiber. Coffee has a distinctive aroma from the coffee plant and contains high levels of caffeine compounds. The presence of this compound under certain conditions will make coffee unsuitable for consumption, so several types of coffee have emerged which are made from grains from certain plants. One of the potential seeds is snake fruit seeds. Coffee seeds are a new beverage product, the researchers used the old coagulation factor, because long coagulation will affect the formation of aroma and the color of the coffee powder produced will determine the characteristic taste of coffee, which is caused by long variations in coagulation times that vary. The results obtained are presented in the form of tables and analyzed descriptively. The resulting ash composition of red coffee seeds (*Salacca edulis*) based on different grain durations was 3.46% for 30 minutes, 4.24% for 60 minutes, and 4.70% for 90 minutes. The highest ash content found in red coffee was 4.70% and the lowest grain is 2.46%.

**Keywords:** Red Salak, ash content, roasting duration

## 1. Introduction

Indonesia is the best place to grow caterpillars. The kinds of plants and fruits can keep growing and thriving well with this good climate. To meet the human body's need for nutrients such as nutritional fibers, vitamins, and minerals, fruits and vegetables are vital to life (1). Salak or *Salacca zalacca*, is a fruit that originates in Indonesia. One of the members of the palmae family, this fruit has a stalk covered by a very tight leaf release. It is brown, sprinkled in brown. It is in the leaves (2). The cultivation centers of the salak in Maluku are located on the island of Ambon, like the villages of Soya, Hatalai, Wakal, Amahusu, and the Great Hative, as well as on the islands of Seram, such as the Villages of Piru, Taniwel, and Riring. One of Maluku's native crocodile cultivars is one found in the western part of Horam. This is due to the unique advantages of this cultivar, including

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the sweetness of acid and the appearance of red meat (3). Salacca (*Salacca edulis*) is one of Indonesian native primary fruit plants that should be given priority for research (4).

Shell seeds, the waste of shellfruit, have a larger portion than shellskin. 25-30 percent of shells are whole, while 10-14 percent are shells. This comparison shows that shells have a greater potential to be exploited. Scraps are used by some people for craftsmanship, like scraps for the ceramic industry. Nowadays, the seed has been processed into coffee and has begun to be as a new product by the people of North Sumatra and Java (5).

Proximate analysis is a type of chemical analysis used to determine the content of food substances in feed (6). Proximate analysis analyzes several components such as water content, organic matter (gray), protein, fat, carbohydrates, and raw fiber (7). Ash content is a residue of an inorganic component contained in feed materials that has a very close relationship with minerals (8). Ash content is a residue of an inorganic component contained in feed materials that has a very close relationship with minerals (9).

Many studies have shown that the seed can be processed into antioxidant seed coffee, a profitable local food product, but the community has not used it. The processing of this seed must produce economic value for farmers, so that they can earn income when the price of the fruit is low. As shown by research findings (10), The antioxidant capacity of snake fruit coffee is 436.91 mg/L GAEAC (antioxidant capacity equivalent to gallic acid) with an IC<sub>50</sub> of 9.37 mg/mL. It is hoped that this antioxidant content will increase the value of the agricultural products produced. Arabica luwak coffee and Arabica coffee have antioxidants with an IC<sub>50</sub> of 18.38 and 15.51. Polyphenols, antioxidant compounds, contain approximately 200–550 mg per cup of coffee (11), the antioxidant content of berries, grapes and vegetables is around 25%, and coffee is around 26%. Thus, snake fruit coffee has great potential to be marketed as a local food product as an anti-oxidant drink typical of Karangasem, as well as an effort to generate economic value from the use of snake fruit seeds. This is due to the fact that nowadays antioxidants are increasingly needed by people to protect their health from oxidation processes and free radicals. Organoleptic properties such as taste, aroma and color that determine the quality of a cup of coffee are greatly influenced by filtering (12). For this reason, research needs to be carried out to determine the influence of roasting duration factors on the ash content of red salak coffee beans.

## 2. Method

### 2.1. Research type

Experiment studies are the sort of research that was used in this study.

### 2.2. Research Location

a. The location for sampling red salak fruit will be in Riring Village, Taniwel District, West Seram Regency.

b. The processing of the red salak fruit sample will take place at Pattimura University, Ambon's Basic Biology Laboratory, Faculty of Teacher Training and Education.

c. The analysis process for red snake bean coffee samples will be carried out at the Laboratory of the Center for Industrial Research and Standardization (Baristand) Ambon.

### 2.3. object of research

This research focuses on the seeds red salak fruit (*Salacca edulis*), which were collected purposively from 265 snake fruit, each with a seed weight of 900 grams 22. The physiological and morphological characteristics of the red snake fruit used are that the skin is blackish brown and the flesh is soft red.

### 2.4. Ash Content Analysis

Coffee powder ashes are measured by gravimetry (13). Insert four grams of samples into a porcelain cup. After the porcelain Cup is dried in the oven at a temperature of 100–105 °C, the sample is cooled in the dryer before weighing. After that, the samples are placed over the electric stove until no smoke is left. The calculation of ash levels is shown as follows:

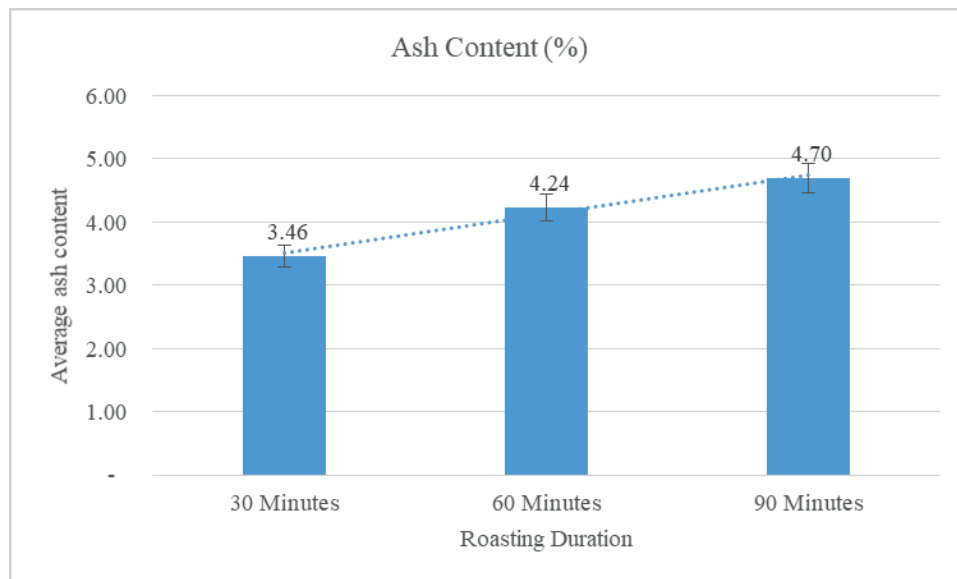
$$\text{ash content} = \frac{\text{ash weight}}{\text{dry sample weight}} \times 100$$

### 2.5. Data analysis

Descriptively analyzed to analyze the results of the research.

### 3. Result and Discussion

Figure 1 displays the findings of the examination of the ash content of red spruce coffee seeds.



**Figure 1:** Red Coffee Seed Ash Rate.

The level of ash of a substance indicates the amount of mineral that does not burn into a vaporizing substance. This study found that the concentration of the ashes of red spruce seeds with a duration of regeneration of ninety minutes was 4.70 percent.

### 4. Discussion

To determine the nutritional value of a product or food material, especially the total mineral value, proximate analysis uses the total percentage of ash, which is organic residue resulting from process of combustion or oxidation of the organic part of the food material (14). The level of ash of a substance indicates the amount of mineral that does not burn into a vaporizing substance. This study found that the concentration of the ashes of red spruce seeds with a duration of regeneration of ninety minutes was 4.70 percent.

Ash content is a mixture of inorganic materials or minerals found in food materials. 96% of food materials are made up of anorganic material and water, and mineral elements occupy a small portion of the remaining amount. Overall, the results of the water level analysis show that higher temperatures indicate a reduce in the water percentage of the source material, while lower temperatures show an increase in the

ashes content. Different mineral content in the sample of coffee powder causes a difference in the percentage of ash content. Generally speaking, the ash content of each treatment still meets the SNI 8964-2021 quality standard, which is no more than 6% (15) that's between 4 and 5.39%.

## 5. Conclusions

Based on the data from the study's findings, it is possible to draw the conclusion that the characteristics (physical and chemical) change with the length of recovery. The ash level will rise the longer the recuperation period takes.

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