

The Utilization of Banana Excrescence Waste as a Fiber Source for Human Body in ‘Meat-Like’ Form

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1. Introduction

Nowadays, people especially children and adolescence do not like to eat vegetables, which are an important source of fiber. Fiber consists of two parts which are dietary fiber and crude fiber. Crude fiber has benefits such as keeping the stomach full for a rather long time, helping digestive system and many more. This is proven by the local wisdom in East and Middle Java before the Independence Day, people eat banana excrescence due to the inability to afford rice, the excrescence kept their stomach full, and the ‘fullness’ feeling indicates high fiber level. Banana excrescence which is now wasted in Indonesia, especially Surabaya and East Java, has proven to have a high level of crude fiber. A surprising percentage of 15.6 % crude fiber is contained on dried and untreated Kepok banana excrescence. Therefore, this research aims to utilize Kepok banana excrescence waste as a fiber source, maximize the percentage of the crude fiber, and to find a convincing form to make people want to eat banana excrescence which is a meat-like form.

2. Problem Statement

Children and adolescences need approximately 20-35 grams of fiber a day but they do not like to eat vegetable. Also, kepok banana excrescence that has a lot of potential is not utilized yet despite of the beneficiary. It is often wasted after the bud has sprouted, therefore the solution to optimize the utilization is needed.

3. The Purpose of the Investigation

This study aims to utilize Kepok banana excrescence waste as a fiber source by maximizing its fiber percentage, also to produce a ‘convincing’ form which is liked by all age, which is meat-like form.

4. Research Method

This research was conducted by processing the banana excrescence to meat form, which require methods such as slicing, soaking in sodium chloride solution (NaCl), boiling, fermentation, sun drying, grinding, and final process which is creating the meat-like form. Fermentation method is chosen in order to increase the crude fiber level. Fermentation in specified time has a significant effect to the crude fiber level. The process is described as follows.

- (1) Slicing the banana excrescence in approximately 5 x 5cm and 1mm thick
- (2) Soaking the sliced banana excrescence in sodium chloride solution to remove the sap
- (3) Boiling the sliced, soaked banana excrescence in hot water for 1 minute or less

- (4) Fermenting the banana excrescence by putting it into an airtight container, adding 20 grams of yeast (*Rhizopus oryzae*) for 700 grams of banana excrescence. The fermenting process is done for 3 days which is the 'lock' phase of the yeast.
- (5) Sun-drying the fermented banana excrescence for approximately 2-3 days depending on the weather in order to obtain an optimum result, because oven drying requires high temperature that may damage the content
- (6) Grinding the dried banana excrescence to obtain a flour-form and separating the inedible parts
- (7) Final process is conducted by adding 100 ml water to 50 grams flour, and steaming the mixture for 20 minutes.

After the final product was obtained, a Gravimetric test was conducted in order to know the crude fiber content. Also, some sampling data was collected through 20 respondents by giving them a sample of the 'meat-like' banana excrescence alongside with a questioner.

5. Result and Analysis

Due to the high moisture level, the 'meat' yielded from 5 kilograms of banana excrescence was 1 kilogram. The final product of fermented banana excrescence has a 21.57% percentage of crude fiber and obtains a good response from the respondents. Below is the questioner and analysis result

Analysis	Method	Unit	Result
Crude Fiber	SNI 01-2891-1992 point 11 (Gravimetric)	%	21.57

fig 5.1 analysis result

Questions	The response "Yes"	The response "No"
What is it (is it meat or not?) and does it resemble meat? (Being compared with real meat)	70% (14 people)	30% (6 people)

fig 5.2 questioner result

6. Conclusion

Kepok banana excrescence waste can be utilized as a fiber source in 'meat-like' form and has an optimal level of crude fiber after being fermented. It also obtains good responses from the respondents. Therefore, this product can be accepted, and can also be a potential employment for folks.

References

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