Product Preferences: an Analysis of Instant Uduk Rice

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Abstract—This research study aimed to analyze the quality feasibility of an instant uduk rice product, that was associated with the consumer acceptance study in terms of the preference level. Data analysis techniques with descriptive statistics and Friedman analysis. The results based on consumer preferences in color uduk rice with the highest percentage on the criteria very like by 45.4; Uduk flavored rice based consumer ratings on the criteria very like 59.1%; Flavour rice uduk based on assessment consumers on the criteria very like 57.7. Texture rice uduk on the criteria very like 42.3. The organoleptic test showed that there were significant differences between aluminum foils and plastics packaging for the predilection of color and smell, with the value of 0.046 and 0.006 (less than 5%). The nutrition of carbohydrate content was the use a manual oven has higher levels (63.86) when electric ovens (62.44), while the fat using the electric oven has the highest content (12.18%) when of manual

I. INTRODUCTION

The rice is a staple food for most people in Indonesia which is consumed in the largest quantity each day. Based on this fact, Indonesian people are difficult to leave or to replace rice with other type of staple food with the same nutrition. Rice consumption as a staple product has psychologically stuck to Indonesian culture in wide area. Either in joy or sadness, people gather together in cultural events with symbols in forms of food whose main ingredient is rice that has been made to be various dishes such as steamed rice, lontong (a rice cake mostly in cylinder shape wrapped inside banana leaves), ketupat (a rice dumpling mostly in diamond shape wrapped inside woven palm leaves), porridge, etc. Those prove that Indonesian people are very dependent to rice as their main staple food, therefore this instant uduk rice can be introduced to people as a fast-serving food in emergency conditions such as in a natural disaster, it can also be served as a food supple in a long trip such as Hajj (Islamic pilgrimate), etc. From a search result that has been completed about this instant uduk rice, this product has several benefits: 1) It contains nutrition which are: Kh 62 %, Protein 12%, and fat 11%; 2) It has fast serving time which is five minutes. 3) It is packed in light packaging so it can be brought everywhere, 4) It is tasty because it contains seasonings and spices [6].

A type of food that can increase human’s energy is rice. Rice (\textit{Oryza sativa}) is a cereal type of food which becomes Indonesian people’s staple food. The high production capacity of rice is balanced by the high rate of domestic consumption. Rice consumption rate in Indonesia is 139.5 kg/capita/year in 2009. The high rice consumption rate in Indonesia makes rice as a commodity that has high opportunity to be exploited further in term of processing. Nowadays, rice is commonly processed as cooked rice or porridge. In traditional way, rice processing needs approximately 30 minutes of time to boil it until done. If it’s added by the preparation time, this whole process can take up to approximately one hour.

Instant food products in markets nowadays very rarely use rice as their main ingredient. Instant food products that are sold all this time can only give the full feeling to the consumers, not the satisfied feeling. Other processing result from rice is uduk rice or flavored rice. Uduk rice has been known by Indonesian people especially Javanese ones and it is a traditional dish from Betawi (Jakarta). Consuming uduk rice is not something new for some people. Instant uduk rice has a potential to be accepted by consumers, thus this product is able to be developed further in bigger production scale.

Instant uduk rice was produced with aim of creating a food product that is more handy, practical, and ready to eat. This instant uduk rice product is expected to change people’s thought related to the uduk rice traditional making which takes a lot of time. This research was a further development that has goal of knowing consumers’ acceptance and the product’s properness level based on its color, smell, taste, and texture or softness, thus it is a necessary to hold a research by creating a bigger scale instant uduk rice product and still focuses on its nutrient content and good food safety.
The principal roles of food packaging are to protect food products from outside influences and damage, to contain the food, and to provide consumers with ingredient and nutritional information [14]. Traceability, convenience, and tamper indication are secondary functions of increasing importance. The goal of food packaging is to contain food in a cost-effective way that satisfies industry requirements and consumer desires, maintains food safety, and minimizes environmental impact [19].

II. METHODS

The redundant research was an experimental one, which aimed to know the properness level of instant uduk rice product and consumers’ acceptance based on the level of preference including: color, smell, taste, and texture. The population scale in this research was a big scale of people, and samples were randomly taken, and the total of samples Wet n137 people as panelists. The research design was a plan created by the researchers where each step was identified as a reference of the research [2].

This is an illustration of the procedure of producing instant uduk rice:

![Diagram of the procedure of producing instant uduk rice](image)

The research design showed one factor, which was the preference level of instant uduk rice. The design is illustrated as a table below.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Y1 Color</td>
</tr>
<tr>
<td>(X)</td>
<td>XY1</td>
</tr>
</tbody>
</table>

Note:
- X : The sample of instant uduk rice product
- Y (1, 2, 3, 4): Consumers’ preference toward the product

In this research, the data collection method used observation method. Observation method is done by performing an organoleptic test to know the product’s preference level including: color, smell, taste, texture. The data analysis technique was done by a help of SPSS 18.00 computer program. The data then were analyzed using descriptive statistics percentage and Friedman test to observe the properness level of this product through the consumers’ preference level.

III. RESULTS AND DISCUSSION

Consumers ratings of instant uduk rice’s properness based on product preference level includes: color, taste, smell, and texture with the criteria of: very fond, fond, fond enough, and less fond. Results data are illustrated as follows.

According to figure 3, there are percentages of consumers’ rating for instant uduk rice’s color with the criteria of very fond 45.4%; fond 39.4%; fond enough 9.5%; and less fond 5.8%. The highest criteria was very fond which was 45.4%. This was because the color of dried instant uduk rice is yellowish that was caused of seasoning and drying process, the original rice’s color without seasoning was white, yet since the rice was mixed with seasoning, chicken broth, and coconut milk then it went through drying process (using an oven), the color turned to yellowish white. Seasoned rice which has gone through cooking process will experience color changing that’s influenced by the seasonings, it is because that there is a process of starch browning in dried heating process.
A. Color

According to Figure 3, consumers rated the color of instant 
uduk rice as follows:

- Very fond: 56.9%
- Fond: 37.1%
- Fond enough: 6.0%
- Less fond: 0.0%

B. Flavor

According to Figure 4, consumers rated the flavor of instant 
uduk rice as follows:

- Very fond: 59.1%
- Fond: 32.1%
- Fond enough: 7.3%
- Less fond: 1.5%

The highest criterion was very fond, which was 59.1%. A

A taste of a food product both processed and non processed is

the climax of that food. The flavor of this instant 
uduk rice is

influenced by the seasonings and spices that were added to it,

such as chicken broth, coconut milk, and sliced chicken.

Containing such ingredients, the instant 
uduk rice will have

savory and de licious taste and will satisfy people who

consume it.

C. Smell

According to Figure 5, consumers rated the smell of instant 
uduk rice as follows:

- Very fond: 57.7%
- Fond: 32.0%
- Fond enough: 10.3%
- Less fond: 0.0%

The highest criterion was very fond, which was 57.7%. The smell of instant 
uduk rice comes from the

unique characteristics of 
uduk rice. In the making process, the rice was added by spices and other ingredients such as sliced chicken, thus a strong smell of those additional ingredients will dominate the product, such as the smell of spices,

c–land, and coconut milk which are united to make a very

nice and unique smell that makes people to get interested in

eating it.

D. Texture or Softness

I. Texture/Softness

According to Figure 6, consumers rated the texture of instant 
uduk rice as follows:

- Very fond: 42.3%
- Fond: 39.4%
- Fond enough: 13.9%
- Less fond: 4.4%

The highest criterion was very fond, which was 42.3%. The instant 
uduk rice has soft texture and is easy to

c–ew and swallow. The texture is a result of liquid addition

(fresh mineral water) the re-cooking for serving, with the ratio of dried 
uduk rice and liquid 1 : 1.5. The liquid in re-cooking

process is to wet and to increase the volume of starch granules

inside the rice grains thus the grains will expand and become

soft. This softening process is not too long, which is only three

minutes, because rice grains have gone through twice of

gelatinization process and the surfaces of the grains are already

porous. Besides the amount f liquid, the amount of re-cooking
time also determines the instant 
uduk rice’s texture.

D. Organoleptic Tests Results

The result of organoleptic tests toward the properness quality of instant 
uduk rice including: color, taste, aroma, and

texture/softness are as follows:
Table II. Descriptive Test Results of Consumers’ Ratings for Instant Uduk Rice’s Properness Quality

<table>
<thead>
<tr>
<th>Criteria</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>137</td>
<td>3.2409</td>
<td>0.9341</td>
<td>0.7291</td>
<td>3.0967</td>
<td>3.3851</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Taste</td>
<td>137</td>
<td>3.4691</td>
<td>0.5962</td>
<td>0.3711</td>
<td>3.0670</td>
<td>3.6070</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Aroma</td>
<td>137</td>
<td>3.4059</td>
<td>0.7175</td>
<td>0.4613</td>
<td>3.3396</td>
<td>3.3811</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Texture</td>
<td>137</td>
<td>3.1971</td>
<td>0.8387</td>
<td>0.5754</td>
<td>3.0554</td>
<td>3.3888</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Total</td>
<td>548</td>
<td>3.3467</td>
<td>0.7665</td>
<td>0.3398</td>
<td>3.2805</td>
<td>3.4129</td>
<td>1.00</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Table III. Friedman Test Result of Instant Uduk Rice’s Properness Level

<table>
<thead>
<tr>
<th>Test Statistics</th>
<th>N</th>
<th>137</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td></td>
<td>28.566</td>
</tr>
<tr>
<td>df</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td></td>
<td>0.000</td>
</tr>
</tbody>
</table>

The Friedman test result in Table 3 showed that all four criteria including color, taste, smell, and texture are influential toward the consumers’ acceptance according to the properness level with Chi-Square value of 28.566 and the Asymp.Sig was 0.000 (under 5%). This means that the hypothesis which stated that there would be influences by all four criteria toward the consumers’ acceptance based on the properness level of instant uduk rice.

IV. Conclusion

Organoleptic tests which was completed to know the properness and fondness level of consumers toward color, aroma, taste, and texture/softness for instant uduk rice resulted as follows: 1) Research result based on consumers’ fondness level toward instant uduk rice’s color had the highest percentage in very fond level which was 45.4%. The criteria of taste had the highest percentage very fond level which was 59.1%. The criteria of aroma had the highest percentage very fond level which was 57.7%. The criteria of texture had the highest percentage very fond level which was 42.3%. Therefore the result of consumers acceptance according to the fondness level in color, taste, aroma, and texture resulted that the product is acceptable for consumers; 2) Friedman test results showed that all four criteria including color, aroma, taste, and texture/softness are influential toward the consumers’ acceptance based on its properness level.

References


