Wadi: A Traditional Food of Dayak Ethnic At Central Borneo As An Effort of Food Warranty Based on The Local Wisdom

Indah Sari Dewi¹, Utami Sri Hastuti², Umi Lestari², Hadi Suwono²

¹Educational Biology-Post Graduate Program, Universitas Negeri Malang, Indonesia
²Departement of Biology-Faculty of Mathematics and Natural Science, Universitas Negeri Malang, Indonesia

Abstract

Wadi is a sort of the local wisdom of Dayak ethnic at Central Borneo as the effort of food warranty when fish could be found easily or when other sources of protein, i.e. meat is difficult to be found. Wadi is a fermentation food made from fish or meat processed traditionally by mixing the fish or the meat with salt and “lumu” (fried rice without oil), then preserved for several days until a special aroma and taste were formed, with salty and acid taste with strong aroma. The changes of the taste and aroma of the wadi is caused by fermentation process formed during the preservation. The effort to create the wadi as a local wisdom is need to be continued.

Keywords: food warranty; local wisdom; traditional food Wadi

1. Introduction

Generally traditional processing of meat and fish done with salt, drying, and curing. Another processing was done more benefit and could produce higher nutritive value is needed [1]. People from Dayak ethnic at central borneo have been known the simple method of meat and fish preserving, so the meat and fishes have a long storage duration and a special taste [2], [3], [4] and [5]. The meat and fish preserved is known as wadi. Wadi that have been stiraged in longer time duration have a profit as food preserved in the time that fish difficult to get. Wadi processing have been done by peoole for a long time as the traditional food of Dayak ethnic at Central Borneo. This tradition is important to conserve because refrigerator using for fish and another food preservation does not popular yet.

The meat and fish as a material for wadi usualy mixing with salt and lumu, then preserved in earthen cooking pot and tightly closed, then incubated for days until months before consumed. This paper is writen to explain the sort of lumu material, the fish species that used the traditional method to make wadi, the people responses to continue the wadi production and the prospect to spread and preserve of wadi.

2. Material and Methods

The data collection are done to know the material and method to produced of wadi traditionally that usually done by the Dayak peoples with interview method. The questionnaire is used to know the people responses towards wadi and the prospect to spread and preserved. The questionnaire were given to 300 respondents from Central Borneo in the age 17 to 65 years old.

3. Results and Discussion

The base material of lumu is white sticky rice, white rice, corn that have been fried without oil until brown in colour and were pounded until the smooth in texture. The base material lumu is different at each region at Central Borneo, but could produce wadi with specific aroma and taste that be fond of the people. According to [1], the changes of specific taste is caused of the complex compound degrade to simple compound, i.e: amino acid and lipid acid. The interview and questionnaire results were written in Table 1.

<table>
<thead>
<tr>
<th>The material sorts that used to make lumu</th>
<th>The addition material besides lumu</th>
<th>The fish species for making wadi</th>
</tr>
</thead>
<tbody>
<tr>
<td>White rice (Oryza sativa)</td>
<td>Palm sugar</td>
<td>Patin (Pangasius sp.)</td>
</tr>
<tr>
<td>White sticky rice (Oryza-glutinosa)</td>
<td>Coffee powder</td>
<td>Nila (Oreochromis sp.)</td>
</tr>
<tr>
<td>Corn (Zea mays)</td>
<td>Cinnamomum sp.</td>
<td>Gabus (Channa sp.)</td>
</tr>
<tr>
<td></td>
<td>Artocarpus heterophyllus leaf</td>
<td>Jelawat (Leptobarbus sp.)</td>
</tr>
<tr>
<td></td>
<td>Melastoma mabathricum leaf</td>
<td>Baung (Hemibagrus sp.)</td>
</tr>
<tr>
<td></td>
<td>Manihot utilissima leaf</td>
<td>Tapah (local name)</td>
</tr>
<tr>
<td></td>
<td>Cyperus rotundus leaf</td>
<td>Kelabau (local name)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Papuyu (Anabas sp.)</td>
</tr>
</tbody>
</table>
The method to make wadi traditionally based on the interview result with the housewives is:

1) The fish cleaned and cutted in some parts then leak through until the water at fish body were dried off.
2) The lumu from white rice fried without oil until brown in colour, and then pounded until smooth in texture.
3) The fish were added with salt and lumu (or nature addict material as in Table 1) then mixed and store in closed jar.
4) The fish incubated during 5-15x24 hours.
5) Ready to cooked to make some sort of food based on fish.

Figure 1. Traditionally process of wadi making

The base material of lumu:
- White rice (Oryza sativa)
- White sticky rice (Oryza- glutinosa)
- Corn (Zea mays)

The addition material besides lumu:
- Palm sugar
- Coffee powder
- Cinnamomum sp
- Artocarpus heterophyllus leaf
- Melastoma mabathricum leaf
- Manihot utilissima leaf
- Cyperus rotundus leaf

The fish were washed and cutted in some parts
The fish+salt+lumu were mixed
Storage in closed jar
Incubated for 5-15 days
Ready to cooked to make some sort of food based on fish

The lumu production that used in lumu production is not only white rice, but they can used white sticky rice or corn (see Table 1). Besides of salt, the adding of lumu will make wadi have a special aroma and taste i.e salty and rather acidic. As long as storage time, it makes wadi increase salty and acidic increas and also the aroma. According to [1], the changes of taste to be fermentation taste caused of the microbia take a role in wadi fermentation process, i.e: the halofilic bacteria group that have proteolitic character. The fermentation process could be increas nutrition value of food [6].

There is no standard in the weight of the salt and lumu in the wadi production process traditionally. The Dayak people used to measure with a handful, bowl, milk can, spoon, etc. According to [1], the traditioanally wadi production at South Borneo used salt as adding material more than 25 %, but [4] explained that people more prefer 18% salt for salty tasty, [3] explained that panelis more prefer 15 % salt for salty tasty.

The adding of fried rice without oil as lumu in 15 % from fish total weight, have the must of total amount of Lactic Acid Bacteria (LAB), that can decrease the pH, so the freshness and preservation of wadi could be endured in 14 days fermentation [4]. In the process of lumu production traditionally there is no times standard for fried without oil to lumu’s material.Besides that, there is no with standard for lumu wight per kilogram fish and also the other lumu material weight for one kilogram fish and the other adding material. Another adding material besides lumu, i.e: palm sugar, powder of coffee, sweat wood (Cinnamomum sp), Jack fruit leaf, that add to lumu is to get better taste of wadi. The adding of some material, i.e: are believe to make wadi is more durable and more tasty and also not putrid. The somes sort of leaf were adding in the manner of take the leaves on the upper side of mixed fish and lumu before closed in the jar. Coffee powder usually adding in the mixed lumu or use as of lumu subtitude. The sort of taste that usually use is fresh water that have thick and fatty flash as seen Table 1. But, traditionally people used all sort of fresh water fish in wadi product processed.

In traditionally wadi production process, there is some production version, i.e by adding the salt to fish, then storage in closed jar in one night, and then the water from fish were throw away and the fish mixed with the lumu and incubated for several days. The other procedure is mixed the cleaned fish with salt and lumu then incubated. After wadi production was finished, the fish usually must be cleaned first and then at with spices. After that wadi
will be processed to make some sort of food. The wadi production process traditionally generally can be look at Figure 1.

Table 2. The people responses about wadi and the prospect to spread and preservation

<table>
<thead>
<tr>
<th>Question about</th>
<th>Answer “yes”(%)</th>
<th>Answer “no”(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have been make wadi</td>
<td>232 (77.4)</td>
<td>68 (22.6)</td>
</tr>
<tr>
<td>Want to study about wadi processing</td>
<td>254 (84.7)</td>
<td>46 (15.3)</td>
</tr>
<tr>
<td>Have been read books about wadi</td>
<td>19 (6.3)</td>
<td>281 (93.7)</td>
</tr>
<tr>
<td>Agree of wadi were spread and preserve</td>
<td>300 (100)</td>
<td>(0)</td>
</tr>
</tbody>
</table>

At Table 2, we can see people responses toward wadi as generally. There is prospect for spread and preserve as an effort for wadi preserve as traditional food. Generally, the respondent like to eat wadi, 89.4 % of the respondent like to eat wadi and 10.6 % does not to eat wadi. The responden like to eat wadi because the very salty taste. But, there is 84.7 % responden want to study about how to make wadi, included respondent does not eat wadi. Based on the data, we can understand that preservation of traditional food is still have attention from Dayak people, and 100 % respondents agree that wadi will be spread and preserve as specific food so it will not only known at Central Borneo, but also in another place.

The preserve and spread wadi could be done by teaching to people was some sort of media, i.a: book. Based on result by qustionaire we know that 93.7% responden explained that does not read the book about wadi yet. That is why wadi as a traditional food must preserve and spread to be the tasty and high nutritive traditional food as preserve of traditional culture.

4. Conclusion
1. The materials sort that used to make lumu, i.e: white rice, white sticky rice, and corn.
2. The addition material beside lumu are Palm sugar, coffee powder, Cinnamomum sp., Artocarpus heterophyllus leaf, Melastoma mabathricum leaf, Manihot utilissima leaf, and Cyperus rotundus leaf.
3. The Dayak peoples as the respondents in Central Borneo agree that wadi must be spread and preserve as specific food, so it will not only known at Central Borneo only, but also in another place.

References