

DIFFERENT RAW MATERIAL EFFECT IN PREFERENCE LEVEL AND MOISTURE CONTENT OF SEASONING POWDER

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ABSTRACT

Seasoning is widely used in many dishes for the example fried rice, meatball, chicken soup, beef stew for enhancing the flavor of food. The food will have a good taste by adding some seasoning. It will give umami taste and make people even more enjoying their meal. The purposes of this research were to know the preference level and moisture content of seasoning powder with different raw material. The analysis used in research were moisture content by gravimetric method and preference level consist of appearance, taste, aroma, texture by hedonic test. The moisture content of the anchovy, seaweed and white oyster mushroom seasoning were 10%, 20% and 15% respectively. The appearance levels were 3.7, 2.5, and 4.3. the taste level were 3.5, 1.8, and 4.5. The aroma levels were 1.9, 2.6 and 3.8. The texture levels were 2.6, 1.7 and 4.2.

Keywords: Raw Material, Seasoning, Moisture Content, Preference Level.

INTRODUCTION

Most of the food products circulating in society are processed using food additives, both natural and synthetic. Seasoning is widely used in many dishes such as fried rice, meatball, beef stew, chicken soup and other food for enhancing the flavor. The food will taste more delicious with the addition of seasoning. It will give umami taste and make people even more enjoy for eating the food. Umami is part of five basic tastes besides sweet, sour, bitter and salty (Melis and Barbarosa, 2017). Nowadays, many types of seasoning found in the marketplace. Most of the seasoning presence in the marketplace is synthetic seasoning by using monosodium glutamate (MSG). The synthetic seasoning will give harmful effect in health of our body if the usage limit exceeded. According to Bhattacharya's research (2011), mice given MSG at a dose of 2 mg/bb/day for 75 days found histological changes in the liver, which included hepatocyte nucleus damage, inflammation, and an increase in hepatocyte diameter. Therefore, to reduce the amount

of MSG used, natural ingredients that contain high protein can be used as an alternative of seasoning.

Naturally, The Umami taste can be obtained from glutamic acid in natural compound of food. Natural compounds come from natural food ingredients, such as herbs or spices, essential oil derivatives and plant extracts or compound extracts from animals. For the example of raw food rich in glutamic acid are fish, seaweed and mushroom. As reported by Aryati and Dharmayanti (2014) anchovy (*Cyprinus carpio*) contain 16% of protein, which is glutamic acid is one of amino acid that consist in protein. Widyastuti *et.al.* (2015) stated Fresh white oyster mushrooms contain glutamic acid of 0.0094 g/100 g while the glutamic acid content in dried white oyster mushrooms was 0.0217 g/100 g dry weight. Rahmawati (2020) reported the results of research on making a seasoning made from *Ulva lactuca* seaweed has the characteristics of 20.82% protein, 4.52% fat and 28.40% dietary fiber. Natural glutamic acid can act as a source of umami

taste similar to the taste produced by MSG, so it has the potential to be used as a substitute for MSG. The objectives of this research were to know the preference level and moisture content of seasoning powder with different raw material.

RESEARCH METHODS

Time and Place of Research

This research was conducted in October - December 2022 in the laboratory of the Faculty of Agriculture, University of Banyuwangi PGRI.

Materials and tools

The main raw materials used were anchovy, seaweed species *Undaria pinnatifida* and white oyster mushroom. The other ingredients were red onion, garlic, nutmeg, lemongrass, salt, sugar and water. The instruments used were knife, baking paper, scale (Ohaus), beaker glass (Pyrex), blender (Kirin), pan, stove (Rinai), dryer tubes

(WINA), cutting board, spatula, digital ovens (Memmert), porcelain cup, hand gloves, and desiccator.

Research methods

Seasoning making with natural ingredients according to Nadhifah *et al.* (2021) with slight modification. The formulation of seasoning used was in table 1. The samples were cleaned and drained. Added all ingredients slowly and mixed until smooth. Roasted on pan for 45 minutes. Dried in cabinet dryer at 55°C for 2 hours. Mashed well by blender. Obtained the seasoning than analysis of moisture content using gravimetric method (AOAC, 2005) and preference level using hedonic test with score sheet (Qamariah *et.al.*, 2022). Hedonic test was carried out by 30 untrained panelists provide a specific assessment of the quality of appearance, taste, aroma and texture.

Table 1. The formulation of seasoning powder

Ingredients	Formula 324 (Anchovy)	Formula 424 (Seaweed)	Formula 524 (White oyster mushroom)
Raw material	45%	45%	45%
Red onion	3%	3%	3%
Garlic	23%	23%	23%
Nutmeg	0,3%	0,3%	0,3%
Lemongrass	3%	3%	3%
Salt	2%	2%	2%
Sugar	0,7%	0,7%	0,7%
Water	23%	23%	23%

RESULTS AND DISCUSSION

Moisture content

The results of observing the moisture content in seasoning powder with different raw materials have different moisture content. The results of seasoning powder are presented in Table 2.

Table 2. Moisture content

Raw material	Moisture content
Anchovy	10%
Seaweed	20%
White oyster mushroom	15%

The moisture content of seasoning powder with materials of anchovy, seaweed and white oyster mushroom were found

10%, 20% and 15% respectively. The SNI quality requirements do not have standardized criteria for the moisture content of natural seasoning powder from mushrooms, fish, or seaweed. However, based on SNI 01-4273-1996 regarding the quality requirements for beef seasoning powder, the maximum was 4%. The high moisture content of the seasoning in this study was probably due to the fast drying time and relatively low drying temperature. Low temperature used in this study to maintain the nutrients of the natural seasoning.

The variation in moisture content of seasoning powder due to the different raw materials used. Ardiansyah *et al.* (2014) stated that salt will attract liquid in the material and cause greater volume shrinkage. This condition causes the evaporation of water to be hampered. The highest moisture content in seaweed seasoning powder due to the hydrocolloid properties of seaweed have a high ability to absorb water, resulting in a greater contribution of water from seaweed (Rahmawati *et al.*, 2014).

Preference level

The preference level of consumer for seasoning powder with different raw material by organoleptic test. The organoleptic test carried out is a hedonic test consist of appearance, taste, aroma and texture with using a test scale of 1-5 (Rahmi *et al.*, 2013). The test scale used with a value of 1 = strongly dislike, 2 = dislike, 3 = neutral, 4 = like and 5 = like very much. The principle of hedonic test is to use the human senses in evaluating a product. Hedonic test is carried out using a descriptive test (scoring), where this test identifies the sensory specifications of a product in the form of a description on the scoring sheet (BSN, 2015).

Appearance

The Appearance is one of the important factors that determine the level of consumer acceptance of a product. The determination of food quality generally depends on the color of the food, and will give the first impression of the panelist. The data result of the appearance score can be seen in figure 1.

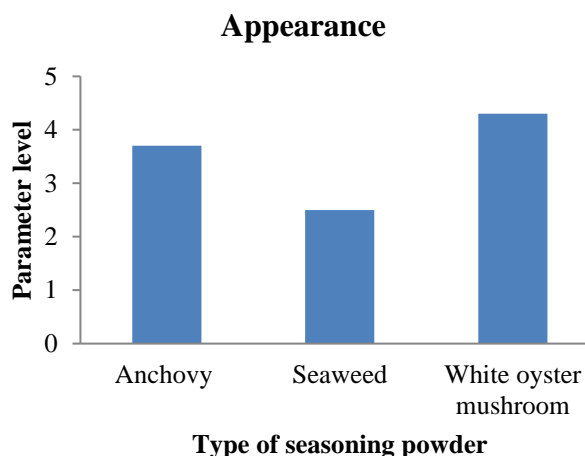


Figure 1. The appearance level of seasoning powder

Based on figure 1, the most preferred appearance level was white oyster mushroom seasoning which has value of 4.3 (like), while the least was seaweed seasoning namely 2.5, which is low acceptability (dislike) of panelist. An attractive color will arouse someone's appetite to try the product. The color of the white oyster mushroom seasoning was bright yellow, for anchovy was white bone color, and the seaweed seasoning was blackish green. The color of natural seasoning is influenced by the raw material for seasoning and the process. The color change in seasoning powder occurred due to the heating process causing color degradation in the seasoning product (Rundubelo *et al.*, 2019).

Taste

Taste is an important aspect of a food product. Taste can also determine whether

the food product can be accepted or not by consumers (Fitri, 2018). Result data of the taste level for seasoning powder served in figure 2.

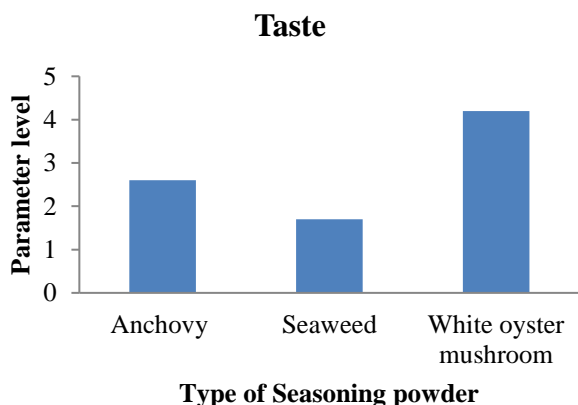


Figure 2. The taste level of seasoning powder

Data from hedonic test results on the taste of natural seasoning obtained the highest average value for white oyster mushroom of 4.5 (Like), followed by anchovy of 3.5 (neutral) and the lowest value was seaweed of 1.8 (dislike). White oyster mushroom seasoning had more umami taste than anchovy and seaweed seasoning. Taste of natural seasoning is also influenced by raw materials, processing, and the addition of spices to seasoning. The taste of seasonings is classified as savory, salty and sweet into one due to the presence of sugar and salt, and savory due to the presence of glutamic acid in the raw material (Fitri, 2018).

Aroma

The aroma of food determines the delicacy of the food ingredients. The smell of food is also an important indicator in determining the quality of food ingredients. The results of aroma score established in figure 3.

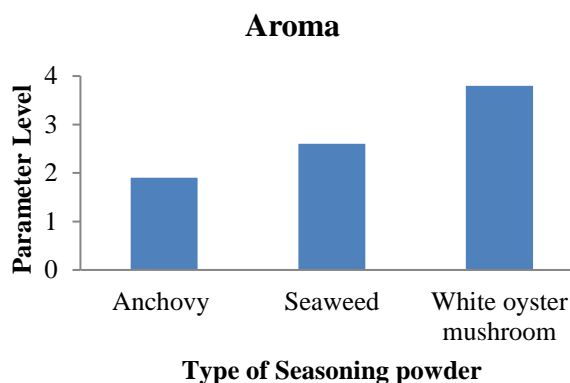


Figure 3. The aroma level of seasoning powder

The highest score in seasoning aroma was white oyster mushroom, whereas the smallest score was from anchovy seasoning. The panelist gave like score (3.8) for the white oyster mushroom, neutral score (2.6) for seaweed and dislike (1.9) for anchovy seasoning. Aroma is more related to the five senses of smell. Odors can be detected when in the form of vapor and odor component molecules that touch the top of the olfactory cell (Garnida *et al.*, 2018). Fish and seaweed had fishy smell, so the panelists did not like the smell, while the oyster mushroom has a mushroom smell and is still accepted by the panelists.

Texture

The types of texture that can be assessed by the fingertip include wetness, dryness, hardness, smoothness, roughness and oiliness. The texture and consistency of a material will affect the taste elicited by the ingredient. Texture is a factor that affects the assessment, because the texture of a food will be felt when consumers eat the food (Suryono *et al.*, 2018).

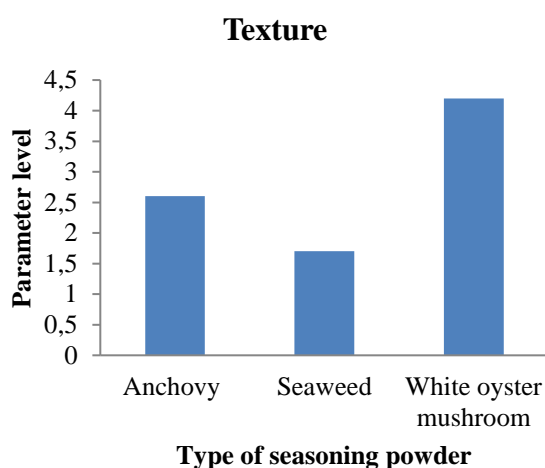


Figure 4. The texture level of seasoning powder

Based on figure 4, the texture level of seasoning were 2.6 for anchovy, 1.7 for seaweed and 4.2 for white oyster mushroom. White oyster mushroom seasoning had smoothness texture, while anchovy and seaweed had roughness texture. Basically, the texture of seasoning powder has smoothness texture.

CONCLUSION

Moisture content in seasoning with different material showed that anchovy has the best moisture content. Seen from the preference level tests which consist of appearance, taste, aroma and texture, the best score is obtained by oyster mushroom seasoning. The results of this research showed that mushrooms, fish and seaweed have high potential as natural seasoning.

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