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ANALYSIS OF THE QUALITY CONTENT OF TRADITIONAL NYALE PROCESSING (Eunice siciliensis) IN WANUKAKA DISTRICT, WEST SUMBA REGENCY

Analisis Kandungan Mutu Olahan Tradisional Nyale (Eunice siciliensis) di Kecamatan Wanukaka Kabupaten Sumba Barat

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ABSTRACT

Nyale processing is a typical preparation of the people of Wanukaka District. The process of processing nyale is simple or still traditional, namely by cleaning sea worms obtained from Wanukaka waters and putting them in a clean container (clear jar), then mixing them with salt, basil leaves, squeezed orange juice. Nyale that has been homogenized with additional ingredients is stored at room temperature for the fermentation process. The aim of this research is to determine the organoleptic content, namely color, aroma and taste. The research results have an average value for aroma, namely 2.77 (like), taste with a value of 2.20 (dislike), color with a value of 2.53 (like), so it can be accepted by the majority of panelists. The proximate content is ash content, water content, fat content, protein content, carbohydrate content. The results of the research show that Nyale which is processed traditionally has a water content of 18.37%, ash content of 32.05%, protein content of 8.63%, fat content of 39.01%, carbohydrate content of 1.95%.

Keywords: Eunice siciliensis, Nyale, Traditional Processing

ABSTRAK

Pengolahan nyale merupakan olahan khas masyarakat Kecamatan Wanukaka. Proses pengolahan nyale secara sederhana atau masih secara tradisional, yaitu dengan cara cacing laut yang diperoleh dari perairan Wanukaka dibersihkan dan dimasukan dalam wadah bersih (Toples bening), Lalu dicampurkan dengan garam, daun kemangi, perasan air jeruk. Nyale yang telah homogen dengan bahan tambahan disimpan pada suhu ruang untuk proses fermentasi. Tujuan dalam penelitian ini untuk mengetahui kandungan organoleptik yaitu warna, aroma, dan rasa. Hasil penelitian memiliki nilai rata-rata untuk aroma yaitu 2,77 (suka), rasa dengan nilai 2,20 (kurang suka), warna dengan nilai 2,53 (suka) sehingga dapat diterima oleh moyoritas panelis. Kandungan proksimat yaitu kadar abu, kadar air, kadar lemak, kadar protein, kadar karbohidrat. Hasil penelitian menunjukkan bahwa Nyale yang diolah secara tradisional

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memiliki nilai kadar air sebesar 18,37%, kadar abu sebesar 32,05%, kadar protein sebesar 8,63%, kadar lemak sebesar 39,01%, kadar karbohidarat sebesar 1,95%.

Kata Kunci: Cacing Laut, Nyale, Olahan Tradisional

INTRODUCTION

Sumba Island is one of the islands in East Nusa Tenggara Province. Sumba Island has quite extensive waters, namely a coastline of approximately 81,000 km^2 (Baransano, 2011). The wealth of potential biological resources, so that it can be utilized optimally and sustainably (Indrawati *et al*., 2018).

Marine worms (*Eunice siciliensis*) are segmented worms that have many similar hairs on their bodies. Marine worms (*Eunice siciliensis*) which are very popular with the public are their nutritional content which is quite high in protein ranging from 50%-63%, fat 5.25% - 14.19% and contains minerals (Hadiyanto, 2013). The high protein content also has the potential to be used as an alternative protein source (Nurhayati, 2017).

Marine worms appear once a year in March. The tradition of sea worms (*Eunice siciliensis*) in the waters of Sumba or Wanukaka Sea worms (*Eunice siciensisis*) in West Sumba Regency have become a fishery commodity that is carried out every year because it is a food source that is highly anticipated by the community. This is because nyale is a food derivative product, such as fermented products to ready-to-eat dry processed products. In addition, local people also believe that consuming sea worms (*Eunice siciliensis*) can have a positive impact on health.

Traditional processing is one of the processing methods that has become a tradition from ancestors that has been carried out for generations on a household industry scale (Tega *et al*., 2021). The process of processing sea worms (*Eunice siciliensis*) is very simple by using a simple method, namely the sea worms (*Eunice siciliensis*) are cleaned first, then the clean nyale is put in a basin then salt and other ingredients are added, the nyale is stored in a closed container and stored at room temperature for the preservation process (Fermentation) (Nursinar *et al.*, 2018), This study aims to determine the chemical and organoleptic content of sea worm products that are processed traditionally.

METHODS

This research was conducted during February - April 2023. During the Pasola season, a tradition carried out by the community every year. The place for sampling and product manufacturing is on the coast of Wanukaka District, West Sumba Regency, East Nusa Tenggara. The method used is the experimental method, Proximate Analysis was carried out at the Agricultural Laboratory of Warmadewa University while organoleptic analysis was carried out at the Integrated Mathematics and Natural Sciences Laboratory of Wira Wacana Christian University. This study uses descriptive analysis on processed sea worm products.

RESULT

The results of the proximate analysis study on traditional processed products of nyale sea worms, Proximate testing is an analysis to determine the percentage of nutrients or nutritional content in processed products. Namely such as ash content, fat content, protein content, carbohydrate content (Hestina *et al.*, 2018). The analysis used is proximate, the results of the analysis of processed products can be seen in Figure 1 below:

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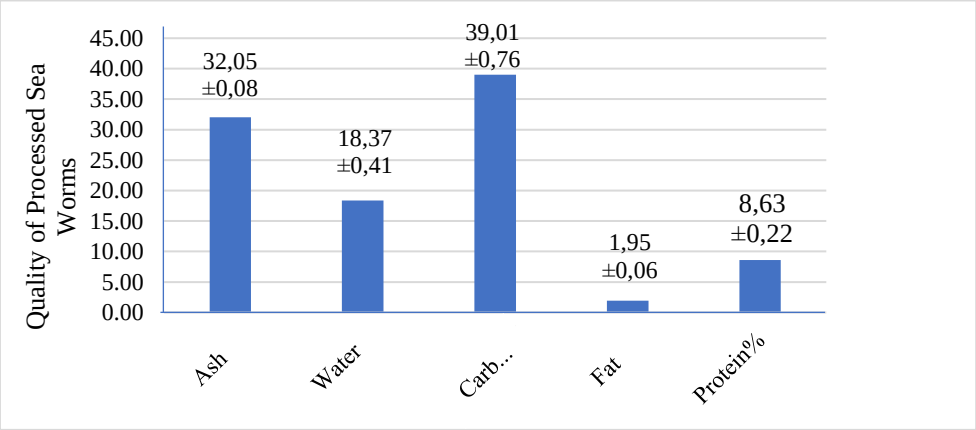

Figure 1. Proximate Analysis Results

Organoleptic testing is a test using the five senses, namely the nose, eyes, tongue and hands. This test was carried out by 30 panelists, to see the level of preference, such as Taste, Aroma, Texture and Color (Asgar *et al*., 2010). This method is used to assess the panelists' preference for nyale processed products. The panelists' preference test for nyale processed products has several parameters used, namely color, taste, and aroma. Can be seen in Figure 2.

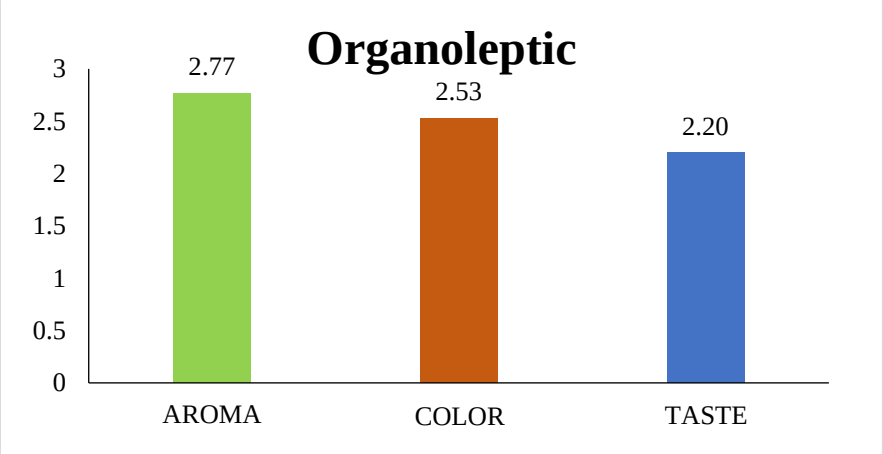

Figure 2. Organoleptic Observation Results

DISCUSSION

Proximate of Nyale Worms

A. Ash Content

The results of the ash content analysis of this worm are 32.05%. The ash content of this nyale worm is not much different from the ash content of loar worms found in Ambon waters where the ash content is 10.78% (Pamungkas, 2015). The high ash content in nyale preparations is due to the fermentation time of the protein that breaks down in the enzymatic hydrolysis process causing inorganic minerals to be released in the resulting fermentation product (Milla *et al*., 2022). The increase in ash content is due to the addition of salt containing several mineral elements such as calcium, dissolved salts from the hydrolysis process which can affect the high ash content in fermentation (Damayanti *et al*., 2021). Therefore, further studies in relation to the mineral composition of the nyale body also need to be carried out.

B. Water Content

Water content is one of the important parameters for determining the quality of food ingredients. The water content itself also determines the quality of the shelf life of food ingredients, according to Sedjati (2017). The results of the study showed that the water content

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of nyale Eunice siciliensis from the waters was 18.37. This value is still higher when compared to the water content value produced by Vertygo *et al*. (2022) which is 6.22%. Water content is correlated with susceptibility to decay (decomposition) by microorganisms. The lower the water content, the lower the level or possibility of decomposition (FDA, 2018). This can contribute to the long storage time of this animal as food so that it is beneficial for long-term consumption (Erkmen & Bozoglu, 2016).

C. Fat Content

Based on the results of the study, it showed that marine worms (*Eunice siciliensis*) from Wanukaka waters 39.01 This value is still higher when compared to the fat content value produced by Vertygo *et al*. (2022), which is 9.61%. This can be caused by the topography of the waters, substrate, climate and weather, which can cause the fat content in the nyele sea worms from Wanokaka waters to be higher.

D. Carbohydrate Content

Based on the results of the analysis, the carbohydrate content in sea worms (nyale) is 1.95%. The carbohydrate content of these nyale sea worms is still lower. In Vertygo *et al*. (2022), it was stated that the carbohydrate content of nyale worms was 27.13%, when compared to the carbohydrate content of nyale sea worms obtained from Wanokaka waters. The form of carbohydrates with this function that can be contained in the worm's body can be in the form of Glycogen molecules, which are also a form of energy for animals in general. As in most members of Annelida (for example earthworms), this glycogen can be stored in a special cell, namely the Chloragogen cell or also called Chloragocyte (Affar *et al*., 1998).

E. Protein Content

Based on the results of the study, it shows that the protein content of nyale taken in the coastal waters of Wanokaka is 8.63%. This value is still lower when compared to the protein content value produced in the study of Vertygo *et al*. (2022) which stated that the content of marine worms was 52.34%. This is in line with Hadiyanto (2013) who stated that most marine worms have a protein content range of ±50%. The content is also different from nyale found in Central Lombok, West Nusa Tenggara (NTB) which is around 37% (Suhardatan, 2020). The protein content in these worms is also much higher when compared to seawater fish such as tuna, mackerel, and kombong, where the protein content is respectively around 7%, 24%, and 27% (Nur, 2018). This shows that with such high protein content, Nyale worms can be used as a food source that can complement and even replace the protein intake available in the foods mentioned above, as well as other protein foods such as milk, eggs and meat. The function of protein in the body mainly plays a role in growth, development and tissue repair (Hikmah *et al*., 2022).

Organoleptic of Nyale Worms

A. Aroma

Aroma is the main factor that can influence consumer interest in a food ingredient (Permatasari, 2015). Due to the presence of methylketone molecules, butylaldehyde, ammonia, amino, and other anonymous compounds as a result of fat oxidation, a distinctive aroma develops (Rokhima, 2005). Even if rancidity in this situation may be caused by fat oxidation or decreased nutritional quality, if the process is not too long, it will produce a distinctive aroma that people really enjoy (Rochima, 2005). The results of the observation showed that the level of panelists' preference for processed nyale aloma had an average value of 2.77, which is in the range of less like.

B. Color

Color is the result of observations with vision that can distinguish between one color and another. Color is something that needs to be considered in choosing food products, color is an important component in the panelists' assessment of the quality of color in the final product

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(Permatasari, 2014). The results obtained showed that the level of panelists' preference for the color of processed nyale products with an average value of 2.53, which is in the range of less like. Why panelists were more dominant in choosing less like because it is likely the first time there has been an organoleptic test on processed nyale.

C. Taste

Taste is an important component in determining panelists' preference for processed nyale products (Parnanto, 2010). Taste is also a response to chemical stimuli that reach the tongue's taste buds, especially the basic taste types, namely salty and sour. With high consumption, the sense of taste will easily recognize these basic tastes. Several components that play a role in determining the taste of processed food are the type, ingredients and aroma of food ingredients. Texture, Crispiness, level of ripeness and temperature of food. Taste is also a perception of taste cells including salty, sweet, sour and bitter tastes caused by ingredients that are easily dissolved in the mouth (Pitunani *et al*., 2016). Salt can cause a taste that is too salty, tending to be preserved food, this is due to the content of magnesium (Mg), sulfate (SO_4) and chlorine (Cl) which cause a salty taste that tends to be bitter in the fermented product (Maruf, 2014). The results obtained showed that the level of panelists' preference for the taste of processed nyale products with an average value of 2.20, which is in the range of less like.

CONCLUSION

Based on the research results obtained, it can be concluded that the organoleptic test of nyale processed products has an average value of aroma 2.77%, color 2.53% and taste 2.20. Proximate nyale processed products show an average protein content of 8.63%, an average ash content of 32.05, an average fat content of 39.01%, an average carbohydrate content of 1.95%, and an average water content of 18.37%.

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