Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

ANALYSIS FAT CONTENT MANGROVE SNAIL (Telescope telescope) IN THE WATERS OF THE MANGROVE FOREST OF NEGERI LUHU AND FOREST WATERS WAAI VILLAGE MANGROVE

Desi Armawati Dwilestari[1*]
[1*] Elementary School Teacher Education, STKIP Seram Raya, Email: desiarmawati2@gmail.com
*email koresponden: desiarmawati2@gmail.com

DOI: https://doi.org/10.62567/micjo.v2i2.600

Mangrove snails (Telescopium telescopium) are a type of gastropod that live in brackish water or mangrove forests dominated by mangrove plants. Mangrove snails have a fairly high nutritional content consisting of fat, protein, essential amino acids, and saturated fatty acids. This study aims to determine the fat content of mangrove snails from two different locations, namely in the mangrove forest waters of Negeri Luhu and the mangrove forest waters of Waai Village.This type of research is descriptive qualitative with the object of research being the fat content of mangrove snails. This research was conducted at the Basic Chemistry Laboratory of Pattimura University, Ambon, which was carried out starting on October 14, 2020. Data collection was obtained from the results of the analysis of the fat content of mangrove snails using the soxhlet method. The results of the study showed that from six samples of mangrove snails obtained from two different locations, it was known that the mangrove snail samples in Negeri Luhu had a higher fat content with an average value of 4.5448% compared to the mangrove snail samples in Waai Village which had an average value of 3.3649 %.

Keywords: Mangrove Snails, Fat Content, Soxhlet Method .

1. INTRODUCTION

Indonesia is a country rich in gastropods. Gastropods are one type of mollusk that is widely distributed both in waters and on land. Gastropods have a large contribution to the mangrove ecosystem, both by directly eating fallen mangrove leaves and digesting mud containing mangrove litter. Damage to mangrove forests can also threaten the existence of one of the biota around the mangroves, one of which is the mangrove snail. The gastropod organism of the mangrove snail type (Telescopium telescopium) is an animal from the potamididae family that lives in brackish water on a muddy bottom substrate and is influenced by the ebb and flow. When the tide recedes, this organism will seek shelter by burying its shell in the substrate or hiding under the mangrove roots. Such behavior is an adaptation to environmental changes caused by the ebb and flow in mangrove forests.

Mangrove snails in mangrove forests play an important role in the process of litter decomposition and mineralization of organic matter, especially those that are herbivorous and detrivorous. In other words, mangrove snails act as decomposers. Mangrove snails are also a marine resource with economic value. Mangrove snail meat is usually used as

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

a side dish that has high nutritional value. The nutritional value of mangrove snails (Telescopium telescopium) has quite good nutritional content, because it contains a lot of amino acids and essential fatty acids, these nutrients are very useful for preventing anemia, optimizing blood circulation, and the formation of various hormone enzymes for body health, in addition, mangrove snails also have properties as an asthma medicine.

In addition to having medicinal properties, mangrove snails have not been optimally utilized, mangrove snail meat is not only consumed as side dishes, medicines, mangrove snail meat can also be used as a raw material for making cosmetics because it contains collagen from mangrove snail meat. The mangrove snail organism Telescopium telescopium or burungo is an animal from the Potamididae family that lives in brackish water on a muddy base substrate that is affected by the ebb and flow and is one of the keys in the food chain in coastal water ecosystems.

Luhu Beach located in Huamual District, West Seram Regency (SBB), and Waai Beach waters located in Central Maluku Regency, Maluku Province have muddy substrates that are overgrown with mangrove forests as a habitat for organisms such as mangrove snails. Mangrove snails are often found in abundance in areas bordering mangrove forests, and local people generally know and utilize these mangrove snails as a food source.

2. RESEARCH METHODS

This research was conducted in a quantitative descriptive manner. Quantitative descriptive research is a research method used to examine samples and collect data by explaining analysis data. Quantitative research in this case is an analysis of the fat content of mangrove snails (Telescopium telescopium) in Luhu Village, Huamual District, West Seram Regency and Waai Village, Central Maluku Regency.

Retrieval And Preparation Sample

The materials used were Telescopium telescopium taken from the waters of Negeri Luhu and the waters of Waai Village . The determination and selection of the research location was determined by conducting a location survey. by looking at the conditions around the waters of Negeri Luhu and the Waters of Waai Village . The samples taken were washed clean with seawater and taken to the laboratory for further preparation and analysis of proximate content, as well as testing of its bioactive compounds. The data

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

taken at this stage is the Telescopium telescopium meat yield .

Data collection technique

The data in this study were obtained from the results of testing the fat content of mangrove snails. The tool used to measure the fat content of mangrove snails (Telescopium telescopium) is the Soxhlet Analysis method. The steps for collecting data include starting with calculating the amount of fat content of mangrove snails using 3 samples from Luhu coastal waters and comparing it with the amount of fat content of mangrove snails with the treatment of 3 samples from Waai coastal waters.

Data Analysis Techniques

This research is a descriptive research, which is a research model that attempts to create a detailed and in-depth description or exposure of a particular phenomenon without intervention and hypothesis. The research approach used is a quantitative approach , while the quantitative data used is the calculation of fat content analysis using the soxhlet method (data that can be categorized in the form of numbers). The analysis used is in the form of percentages and averages displayed in table form, fat content is calculated using the formula:

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

$$\% \text{ Fat} = \frac{w3-w2}{w1} x\ 100\%$$

Information :
W1 = Sample weight (g)
W2 = Weight of fat flask and boiling stone (g)
W3 = Weight of fat flask + boiling stones and fat (g).

3. RESULTS AND DISCUSSION

The results of a comparative study of fat content in mangrove snails in the mangrove forest waters of Luhu Village and Waai Village forest waters analyzed using the Soxhlet method obtained the results presented in the following table:

Table 1.4 Fat Content of Mangrove Snails in Luhu Village

No	Sample Code	Sample Weight	Fat Weight	Fat Content
1	Luhu A 1	3.1976	0.1479	4,6253
2	Luhu A 2	3.1006	0.1426	4,5991
3	Luhu A 3	3.1563	0.1392	4,4102
Average amount		9.4545	0.4297	13,6346
Average		3,1515	0.1432	4,5448

Table 1.5 Fat Content of Mangrove Snails in Waai Village

No	Sample Code	Sample Weight	Fat Weight	Fat Content
1	Hi B 1	3.1466	0.0999	3, 1743
2	Hey B 2	3.0024	0.0064	3,2107
3	Hey B 3	3.1457	0.1167	3,7098
Average amount		9,2947	0.223	10,0948

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Average	3,0982	0.0743	3,3649

Based on the research results in table

1.4 above, it is known that the difference in fat content of mangrove snails (Telescopium telescopium) in Negeri Luhu is higher in the sample spot (Luhu A 1) with a fat content of 4.6253 % and lower in the sample spot (Luhu A 3) with a fat content of 4.4102%. This is because the substrates of the two sample spots are different, because in the sample spot (Luhu A 1) the substrate is muddier and there is also a lot of mangrove litter.

Meanwhile, the results of the study 1.5 above, it is known that the difference in fat content of mangrove snails (Telescopium telescopium) in Waai Village, the higher sample spot is in (Waai B 3) with a fat content of 3.7098 % and the lowest sample spot (Waai B 1) with a fat content of 3.1743%. This is also because the substrate in the sample spot (Waai B 3) has more magrov litter as food. So the results of the analysis obtained from two different sampling sites prove that the highest fat content of mangrove snails is the fat content of mangrove snails in Negeri Luhu with the calculation of the average value of mangrove snail fat content of 4.5448% while in Waai Village the average value of mangrove snail fat content is 3.3649%.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

The difference in fat content of mangrove snails is also influenced by different environmental factors from the two research locations such as habitat, temperature, salinity, and pH of seawater. Based on physical chemical factors that can affect the growth and reproduction of mangrove snails because they have a pH= 7.99 -8.13; salinity $^{0}/_{00}$ = 31-32%; temperature = 30.3-31.2 ^{o} C and DO = 1.85-2.20 mg / L.

When compared to the two places, the environmental conditions of the mangrove forest in Negeri Luhu have very good mangrove forest density and also have muddy substrates to trigger the growth and reproduction of mangrove snails well. In contrast to the research location in Waai Village which has a very reduced mangrove plant density. The lack of mangrove plants can also affect environmental temperature, because high temperatures can cause the salinity of sunlight directly hitting the coastal waters of the mangrove forest.

Mangrove snails (Telescopium telescopium) in addition to being consumed as side dishes, mangrove snails have quite high efficacy, namely as an asthma medicine. Therefore, the importance of fat for the body's needs. The people of Negeri Luhu and also the people of Waai Village can utilize marine biota such as mangrove snails as a food source.

4. CONCLUSION

The fat content of mangrove snails in Luhu Village is higher than the fat content of mangrove snails in Waai Village. The average fat content of mangrove snails in Luhu Village is 4.5448 % and in Waai Village the fat content is 4.5448%. the average mangrove snail is 3.3649%.

5. REFERENCES

Alexander, CG and J. Rae. (1979). The Structure and Formation of the Crystalline Style of Telescopium telescopium (Linneus)(Gastropoda: Prosobanchia).-Veliger 17 (1): 56-60.

Anwar, J., SJ Damanik, N. Hisyam, and A. Whitten. (1984). Ecology of Sumatran Ecosystems. Gadjah Mada Univ. Press. Yogyakarta. Page 23.

Barnes, SSR (1974) . The Invertebrates. Black Scentific Publications, Onford, London. Matter. 270

Cannicci S, Burrows D, Fratini S, Smith III TJ, Offenberg J, Dahdouh-Guebas F. (2008). Faunal impacts on vegetation structure and ecosystem function in mangrove forests: A review. Aquatic Botany 89: 186–200.

Darmasih. (1997). Soxhlet principle. Animal husbandry research and development. Dept. of Agriculture. Go.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Id/user/ptek97 24 pdf. journal of biotropical science.

Dharma, B. (1988). Indonesian Snails and Shellfish. Sarana Graha Jakarta. Page 150

Gelse K, Poschlb E, Aigner T. (2003). Collagen-structure, function, and biosynthesis. And drug delivery reviews. 55 (12):1531-1546.

Gibney, Mj., Vorster Hh., and Kok, Fj. (2002). Introduction to Human Nutrition. Blackwell Science, Oxford.

Gifari, A. (2011). Fatty Acid Characteristics of Tiger Snail Meat (Babylonia spirata), Tofu Clam (Meretrix meretrix), and Snow Clam (Pholas dactylus). Thesis. Bogor Agricultural University. Bogor. Pages 105-106

Haffiluddin. 2011. Nutritional Content and Characteristics of Bioactive Compounds of Sea Leeches (Discodoris) as Antioxidants. Scientific Journal of Fisheries and Marine Sciences. 3 (1) : 1-6

Hamsiah, Djokosetiyanto D., Adiwilaga EM, and Nirmala K. 2002. The Role of Mangrove Snails (Telecopium telescopium) as Biofilters for Waste Processing in Intensive Shrimp Farming. Indonesian Journal of Aquaculture. 1(2): 57-63.

Indrus, S. (2010). Study of Density and Association of Gastropod Species in Sidaggoli Dehe Mangrove Forest, South Jailolo District, West Halmahera Regency, North Maluku Province. [Thesis]. Ternate: Faculty of Fisheries and Marine Sciences. Khair Irwanto University, Mangrove Forest Ecosystem. http:// ecology-hutan.Com /2011/10/ ecosystem-hutanpayau- or- hutan.html. Accessed on January 14, 2020

Irwanto, Mangrove Forest Ecosystem . /2011/10/ ecosystem-of-mangrove-or- forest. html . Accessed on January 14, 2020.

Kirno M., et al. (2012). Proximate analysis and chemical content (Telescopium telescopium) from the ten waters and the Socah waters. Marine journal. 5(1): 72-82

Koswara, S. (2006). Ideal Fat Consumption for Health. Food ebook. http://ebookpangan.com. Accessed on January 24, 2020. Mathlubi, W. 2006. Structure Characteristics of Taiwanese Kijing Crackers (Anadontawoodiana Lea). Thesis. Faculty of Fisheries and Marine Sciences - IPB. Bogor

Noor, YR, M. Khazali, and INN Suryadiputra. (1999). Introduction Guide to Mangroves in Indonesia. PKA/WI-IP. Bogor. Pp. 275-276

Nurrohmah et al. 2009. Sticky Rice Based on Mangrove Snail Eggs as a Nutritious Eco-Efficiency Application. Accessed on August 14, 2011, from: http://www.one.indoskripsi.com

Patricia Sipahelut, D. Wakano, DE Sahartian. (2019). Diversity of Mangrove Species and Dominance on the Coast of Sehati Village, Amahai District, Central Maluku Regency. CELL BIOLOGY (VOL & NO ISSUE JULY- DECEMBER 2019 ISSN 2252-8585X/E-ISSN 2541-1225) PAGE 160.

Purnamaningtyas SE, Syam AR. (2010). Study of water quality in supporting the acceleration of mangrove crab stock in Mayangan Subang, West Java. Limnotek 17 (1): 85-93.

Rangan, JK. (1996). Structure and Typology of Gastropod Community in the Mangrove Forest Zone of Kulu Waters, Minahasa Regency, North Sulawesi.

Multidisciplinary Indonesian Center Journal (MICJO)
Journal page is available to
https://e-jurnal.jurnalcenter.com/index.php/micjo
Email: admin@jurnalcenter.com

Thesis. Postgraduate Program, Bogor Agricultural Institute. Bogor.

Radjasa, O.K., Y. M. Vaske., G. Navarro., H. C. Vervoort., K. Tenney., R. G. Linington., and P. Crew. (2011), Bioorg. Med. Chem. Vol. 19. pp 6658- 6674.

Saenger, Peter. (2002). Mangrove Ecology, Silviculture, and Conservation. Kluwer Academic Publishers, Dordrecht. ISBN 14020-0686-1.

Shoekandris. E. M. Litaai, dan A. Mattimu. (1996). Monthly Measurements of Shell, Shof Body, and Density of Telescopium telescopium L. Bone Bay, South Sulawesi, Indonesia. Tropical Marine Molucca Programe (TMMP). Phuket Marine Biological Center Special Publication 15: 189 – 192.

Sriyanti IA Salmanu, Ine Arini. (2019). Relationship of Physical Environmental Factors to the Diversity and Dominance of Echinodermata in the Intertidal Zone Around the Hila Village Pier, Romang Island, Southwest Maluku Regency. CELL BIOLOGY (VOL & NO 2 EDITION JULY-DECEMBER 2019
ISSN 2252-858X/E-ISSN 2541-1225)
PAGE 183.

Suwondo FE, Sumanti F. (2006). Gastropod community structure in mangrove forests on Sipora Island, Mentawai Islands Regency, West Sumatra. Journal of Biogenesis 2 (1): 25-29.