



Research Article

Fat levels analysis of mantis shrimp (*harpiosquilla raphidea*) in the intertidal zone in the waters of the state of Suli, Central Maluku

Wa Ode Zulfiana¹, Alwi Smith², Muh Nur Matdoan², Hasan Tuaputty^{2*}

¹ College of Biology Education, Pattimura University, Street. Ir. M. Putuhena, Ambon 97233, Indonesia

² Department of Biology Education, Pattimura University, Street. Ir. M. Putuhena, Ambon 97233, Indonesia

* corresponding author: hasan.tuaputty@yahoo.com

Received: February 05, 2022

Revised: March 05, 2022

Accepted: April 29, 2022

ABSTRACT

Mantis shrimp (*Harpiosquilla raphidea*) is a type of predatory shrimp. Mantis shrimp is a type of crustacean with high nutritional value, but it is not widely known by the people of Eastern Indonesia, especially the people of Suli. This research was conducted in May 2021 and was tested for fat content at the Basic Chemistry Laboratory, Pattimura University, Ambon, with the type of descriptive research. This study used the Soxhlet method, which is the method used for fat extraction with N-Hexane as a fat solvent. The results of this study showed that the fat content of white mantis shrimp was 3.33% and black mantis shrimp was 5.56%. The fat content of white mantis shrimp is 3.33% and black mantis shrimp is 5.56%.

Keywords: mantis Shrimp, fat

To cite this article:

Zulfiana, W. A., Smith, A., Matdoan, M. N., & Tuaputty, H. (2022). Fat levels analysis of mantis shrimp (*Harpiosquilla raphidea*) in the intertidal zone in the waters of the state of Suli, Central Maluku. *Bioedupat: Pattimura Journal of Biology and Learning*, Vol 2(1), 7-9. DOI: <https://org/10.30598/bioedupat.v2.i1.pp7-9>

INTRODUCTION

Maluku waters are waters rich in benthic organisms. This type of organism is widely used by the population for food needs and can provide impetus to find new fishery resources at sea. The existence of these resources certainly provides special hope for people living in coastal areas to utilize these resources for consumption (Supusepa, 2018). Food is anything that comes from biological sources and water, which is intended as food or drink for human consumption. Food or food consumed basically functions as a source of energy, maintains or replaces damaged body cell tissue, regulates metabolism and regulates various balances and plays a role in the body's defense mechanism against various diseases. Foods that contain water, vitamins, minerals, calories, and carbohydrates are often found in fruits, vegetables and fish. Marine animals that have broad potential to support human nutritional needs other than fish are shrimp (Pujawan et al., 2012).

There are many types of shrimp including jerbung shrimp (*Penaeus merguensis*), Flower shrimp (*Penaeus sp*), tiger shrimp (*Panaeus monodon*), giant prawn (*Machrobrachium sp*), dogol shrimp (*Metapenaeus monoceras*), brushfan shrimp (*Panulirus sp*), shrimp corallbarong (*Panulirus sp*) and mantis shrimp (*Harpiosquilla raphidea*). The type of shrimp that can be used by the community as food but is not widely known

is mantis shrimp. Mantis shrimp has the potential to be used as a source of community nutrition (Astuti & Arestyani, 2013). Mantis shrimp is a type of marine crustacean that is very popular for consumption. Mantis shrimp is a predatory shrimp capable of attacking prey five times larger than its body size. The body surface of the mantis shrimp is yellowish (Astuti & Arestyani, 2013). Fat is a group of organic bonds consisting of the elements Carbon (C), Hydrogen (H) and Oxygen (O) which have properties that can dissolve in certain solvents. The function of fat is as a producer of energy and as a builder or shaper of the body composition (Mamat et al., 2014).

METHODS

The type of research used in this research is descriptive, which aims to reveal the results of the analysis of the fat content of mantis shrimp in the waters of the State of Suli and its implementation in animal physiology courses. Fat content analysis of mantis shrimp (*Harpiosquilla raphidea*) in the intertidal zone. The sampling location was in Suli Village and the fat content analysis was carried out at the Basic Chemistry Laboratory of the Faculty of Mathematics and Natural Sciences, Pattimura University. Time This research was conducted on May 1 – May 31, 2021 with the research location of the Laboratory of Basic Chemistry, FMIPA, Pattimura University and used a descriptive type of research that aims to determine the fat content of mantis shrimp in the intertidal zone.

RESULTS AND DISCUSSION

Based on the table above, it is explained that the fat content of each sample is different. The white mantis shrimp sample had an average fat content of 3.33%, and the black mantis shrimp sample had an average fat content of 5.56%. The highest fat content in black mantis shrimp is around 5.56%. However, the difference between white mantis shrimp and black mantis shrimp was around 2.23%. When compared with white mantis shrimp (*Harpiosquilla raphidea*) and black mantis shrimp (*Harpiosquilla raphidea*), the black mantis shrimp (*Harpiosquilla raphidea*) has a higher fat content of 5.56%.

Table 1. The results of the analysis of the fat content of the mantis shrimp

type of Mantis Shrimp	Fat level (%)		Average Fat Content (%)
	U ₁	U ₂	
White Mantis Shrimp	3,3641	3,2960	3,33
Black Mantis Shrimp	5,6429	5,4832	5,56

The fat content of mantis shrimp (*Harpiosquilla raphidea*) was analyzed using the Soxhlet method which was carried out at the Basic Chemistry Laboratory, Pattimura University, Ambon. The comparison of the fat content of white mantis shrimp and black mantis shrimp. The fat content of the white mantis shrimp is 3.33%, while the fat content of the black mantis shrimp is 5.56%. Black mantis shrimp fat is higher than white mantis shrimp fat. Data on the average fat content of white mantis shrimp (*Harpiosquilla raphidea*) and black mantis shrimp (*Harpiosquilla raphidea*) can be seen in table. It can be said that the average fat content of white mantis shrimp and black mantis shrimp is different. The fat content of white mantis shrimp at 3.33% and black mantis shrimp at 5.56% is quite small when compared to the previous study by Situmeang (2017) the fat content of 12.35%. The fat content of mantis shrimp varies greatly depending on the type, age level, habitat and feed. The total fat content of sea shrimp is not different from that of shrimp in fresh water, which is 1.0-1.1 grams (Gazali. et al., 2020).

CONCLUSION

Based on the results it can be concluded that the fat content of white mantis shrimp and black mantis shrimp meat is 3.33% and 5.56%, respectively.

REFERENCES

- Astuti I. R., & Arestyani, F. (2013). Potential and economical prospects of mantis shrimp in Indonesia. *Aluaculture Media*, 8(1), 52-59.
- Gazali Muhammad Tengku, Sitinjak. G. R. F., Simanulang, W. (2020). Description and chemical composition of the meat and carapace of the rama-rama shrimp (*Thalassina anomala*). *Journal of Fisheries and Marine Affairs*, 25(2), 138-144.

- Mamat Primary, Muakkir Baits, Nurutl. (2014). Analysis of protein and fat levels in smoked julung fish (*Herminampus far*). Originating from Kayua District, North Maluku, using the Kjeldhal and Gravimetric methods. *As-syifa*, 06(02), 178-186.
- Situmeang, N. S., Purnama, D., & Hartono, D. (2017). Structure of the Mantis Shrimp (Stomatoda) Community in Bengkulu City Waters. *Enggono Journal*, 2(2), 2-3.
- Supusepa, J. (2018). Inventory of types and potentials of gastropods in Suli Country and Tial Country. Department of Marine Science. Faculty of Fisheries and Marine Sciences, University of Pattimura.