ANALYSIS OF THE EFFECT OF WATER QUALITY ON THE GROWTH OF NIRWANA *tilapia (Oreochromis sp.)* AT THE NATIONAL INSTITUTE OF FISHERIES AND AQUACULTURE, MAUBARA, LIQUIÇA, TIMOR-LESTE

THESIS

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POSTGRADUATE SCHOOL
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SEMARANG
2022

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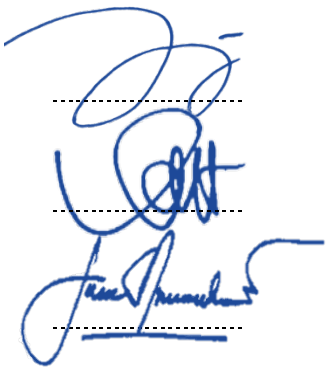
1. Dr. Eng. Maryono, ST, MT	
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STATEMENT

I therefore sincerely certify that the thesis I have written is totally original to me and that it meets the requirements for a Master's degree from the Environmental Science Masters Study Program.

Regarding specific passages in the thesis that I cited from other people's writing, the original source was unmistakably written in accordance with the standards, principles, and ethics of scientific writing.

I am willing to accept the consequence of having my academic degree revoked in addition to other sanctions in line with the relevant rules and regulations if it turns out in the future that all or a component of this thesis was not originally written by me or there was plagiarism in certain portions.

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Delio Da Costa is the author of this Thesis. The author was born in Lilipuho on July 15, 1995, the author was born to the parents of Frizal Da Costa and Anastisia Fernandes, who is the third child of 9 siblings. The author's address is Avenida Moris Foun C, Comoro, Dili, Timor-Leste. The author can be contacted via email deliodacosta15@gmail.com. In 2004 the author started his formal education at State Elementary School No. 10 Home, Lospalos, Junior High School No. 2 Laiku Lospalos (2009-2012), Nino Conis Santana High School Lospalos (2013-2015). After completing high school in 2016 the author continued his Bachelor of Applied Sciences, Study Program of Aquatic Resources Management, Faculty of Aquatic Resources Management at the Jakarta Fisheries University / Jakarta Technical University of Fisheries (STP-AUP) batch 52 and was completed in 2020 through scholarships from the Government of Timor-Leste and the Indonesian Ministry of Marine Affairs and Fisheries. After finishing, the author took the initiative to founded youth platform "*Sustainable Ocean Alliance Timor-Leste"* which focuses on the marine environment and underwater biota life, in the other hands, the author also founded *Vacantes en TLS* which focuses on updating information on scholarships and vacancies for youth in Timor-Leste. In the same year the author received a scholarship opportunity from Diponegoro University through the fully funded *Diponegoro Master Degree Scholarship program* to continue his Masters in Environmental Sciences. With perseverance, high motivation to continue learning, attempted and praying to complete his Masters Degree (S2), the author has successfully completed a study program that has been occupied for 1.8 years, with the thesis title "Analysis of the Effect of Water Quality on the Growth of Nirwana Tilapia *(Oreochromis sp.)* at the National Institute of Fisheries and Aquaculture Maubara, Liquiça, Timor-Leste". Hopefully, this thesis will be able to make a positive contribution to the world of education and increase knowledge and be useful and useful for others.

FOREWORD

I would like to express my deepest gratitude to God Almighty for all His blessings and abundance of grace so that the author can finish writing the thesis research with the title **"ANALYSIS OF THE EFFECT OF WATER QUALITY ON THE GROWTH OF NIRWANA *tilapia (Oreochromis sp.)* AT THE NATIONAL INSTITUTE OF FISHERIES AND AQUACULTURE, MAUBARA, LIQUIÇA, TIMOR-LESTE"**

The purpose of writing this thesis is to fulfill the requirements to achieve a Master's degree in Environmental Science at the Diponegoro University, Postgraduate School.

In the process of writing this thesis, the author has received a lot of guidance and support from various parties that the writing of this thesis can be completed on time. Therefore, the writer would like to express his deepest gratitude and highest appreciation to:

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   The author is aware that this thesis still has a lot of room for improvement. This is why suggestions and insightful criticism are much appreciated. We all hope that this work will be advantageous.

Surabaya,

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ABSTRACT

National Institute of Fisheries and Aquaculture (NIFA) is the first national institute of fisheries and aquaculture in Timor-Leste which was established in 2016 and operated in February 2018, since operating in 2018 until 2021, the NIFA has distributed total fish fry 244,313 tilapia to 336 fish farm groups and communities (individuals) in 12 Municipalities. One of the supporting factors in the success of tilapia cultivation is the availability of feed beside of feed the availability of water quality (temperature, DO, pH) also one of the factors that will determine the success of fish farming. The quality of water in fish ponds must be managed properly so that its growth remains optimal. This study aims to determine the correlation between the quality of the aquatic environment (parameters of temperature, pH, DO) on the growth pattern of tilapia. This research was conducted at the end of April to the end of June 2022. The method used is insistu data collection, water quality sampling and random sampling on fish measurements. The results showed that the quality of the aquatic environment had a close relationship on growths of Nile tilapia, where temperature, pH, dissolved oxygen on the absolute length of tilapia had a positive correlation value (r) (temp to length = +0,593; pH to length = +0,693; dissolved oxygen to length +0,786), while parameters pH, dissolved oxygen on absolute weight of Nile tilapia had a positive correlation value (pH to weight +0,161; DO to weight +0,519), parameters temperature and weight body absolute value of tilapia has a negative correlation value (temp to weight -0,004). Growth pattern of fish in this study is negative allometric where the growth of fish length is faster than the growth of Nile tilapia weight with the t-test $T_{count} > T_{table}$.

Keywords: Water Quality, Growth Tipalia, National Institute of Fisheries and Aquaculture