UNIVERSITI TEKNOLOGI MARA

THE DEVELOPMENT OF AUTOMATIC FISH FEEDERS.

MUHAMMAD NAJMI BIN ISMAIL

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Diploma
(Mechanical Engineering)

College of Engineering

Feb 2023

ABSTRACT

An automatic fish feeder is a device that automatically releases fish food to feed the fish at a predetermined time. Fish have a feeding schedule of once or more per day, making it difficult for the fish owner to be away from home. This shows the need for an automated device that can reliably feed. The device will automatically drop fish food from the storage through a hole. Fish feeder combines mechanical and electrical systems to control fish feeding activity. The quantity of food is also controlled by the device. For a feeding time, it will be controlled by a timer that can be set by the user. The timer controls the motor that runs the gear and propeller to increase functional efficiency. With this, the user or the owner can be away from home with the device monitoring the feeding Schedule.

ACKNOWLEDGEMENT

First and foremost, I want to express my gratitude to God for providing me the chance to pursue my diploma and for seeing me through this exhausting and difficult process. My supervisor, Dr. Hassanuddin bin Abd Kadir, has my gratitude and thanks for guiding me for this final year project.

Finally, I dedicate this dissertation to my parents for having my back to fight in the student life and having my diploma scroll. I dedicate this success to the two of you. Alhamdulillah.

TABLE OF CONTENTS

CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Feeding is one of the important elements for growth and production, their management is one of the most challenges for agriculture development, survivability, and maintenance. The adjustment of feeding delivery to ensure the survival of the fish is important for the fish owner, whether it is a pet or agriculture. Raising or farming fish is usually using a system of ponds, tanks, or cages. With modern technology, today's ingredients have been turned into pellets through local feed companies. Several major and minor issues are being investigated recently for improving power systems and management.

There have been studies about partial feeding rate and frequency in part of the function for the size of the fish and to keep fish healthy (VIRGINIA STATE UNIVERSITY) studies [1]. They state that Small larval fish and fry should be fed a diet high in protein regularly and often in excess. Small fish have high energy needs and need to eat almost continuously and are offered almost every hour. Feeding small fish is not a problem as much as overfeeding big fish because small fish just need a small amount of food compared to the volume of water in the cultural system. So, it shows that timing and quantity are important for fish growth.

Feeding fish is laborious and expensive. Dish frequency depends on the availability of labour, activity size, production system, and fish species and sizes grow up. Large pangasius farms with many common ponds feed only once a day because it takes time and effort limited, while small farms can feed twice a daytime. Overall, feed growth and conversions increase with the supply frequency. In the indoor intensive fish farming system, fish can be fed up to five times a day for maximum growth at optimum temperature.