Studying the growth and survival rate of oysters (*Crassostrea belcheri*) grown in various media.

Research Team: Ms.Gunyakorn Chaiyakornrukdee, Ms.Davarika suphitak
Advisors:Mrs. Sirikwan Nuphuti
Princess Chulabhorn Science High School Trang

Abstract

This science project aims to study the effect of different basket materials on the survival rate and growth of oysters (Crassostrea belcheri), which is a popular economic animal in Trang Province because it tastes good and can generate stable income for farmers. Raising oysters in baskets is a popular method, but there is still no clear information on how different basket materials affect the growth and survival rate of oysters. This experiment used 3 types of baskets: plastic baskets, woven wooden baskets, and iron baskets. Forty-five 5-month-old oysters of similar sizes were divided into 5 baskets each. The experiment was repeated 3 times. The average total weight of each basket was approximately 725 grams. The oysters were raised in a natural environment and their growth in terms of length, width, thickness, weight, and survival rate were measured. Water quality, such as temperature, salinity, pH, and TDS were also checked every 2 weeks for 3 months. The results showed that oysters raised in woven wooden baskets had the highest survival and growth rate, followed by those raised in plastic baskets, and those raised in iron baskets had the lowest survival rate. This may be due to the different properties of the materials that affect water flow, plankton adhesion, and sediment accumulation. The results of this research can be applied to select appropriate materials for oyster cultivation to increase the efficiency of cultivation and create sustainable income for farmers in the community.

Introduction

Objective

1. Study the survival rate and growth of oysters grown in different materials
2. Study the water quality values in the cages that affect the survival rate and growth of oysters
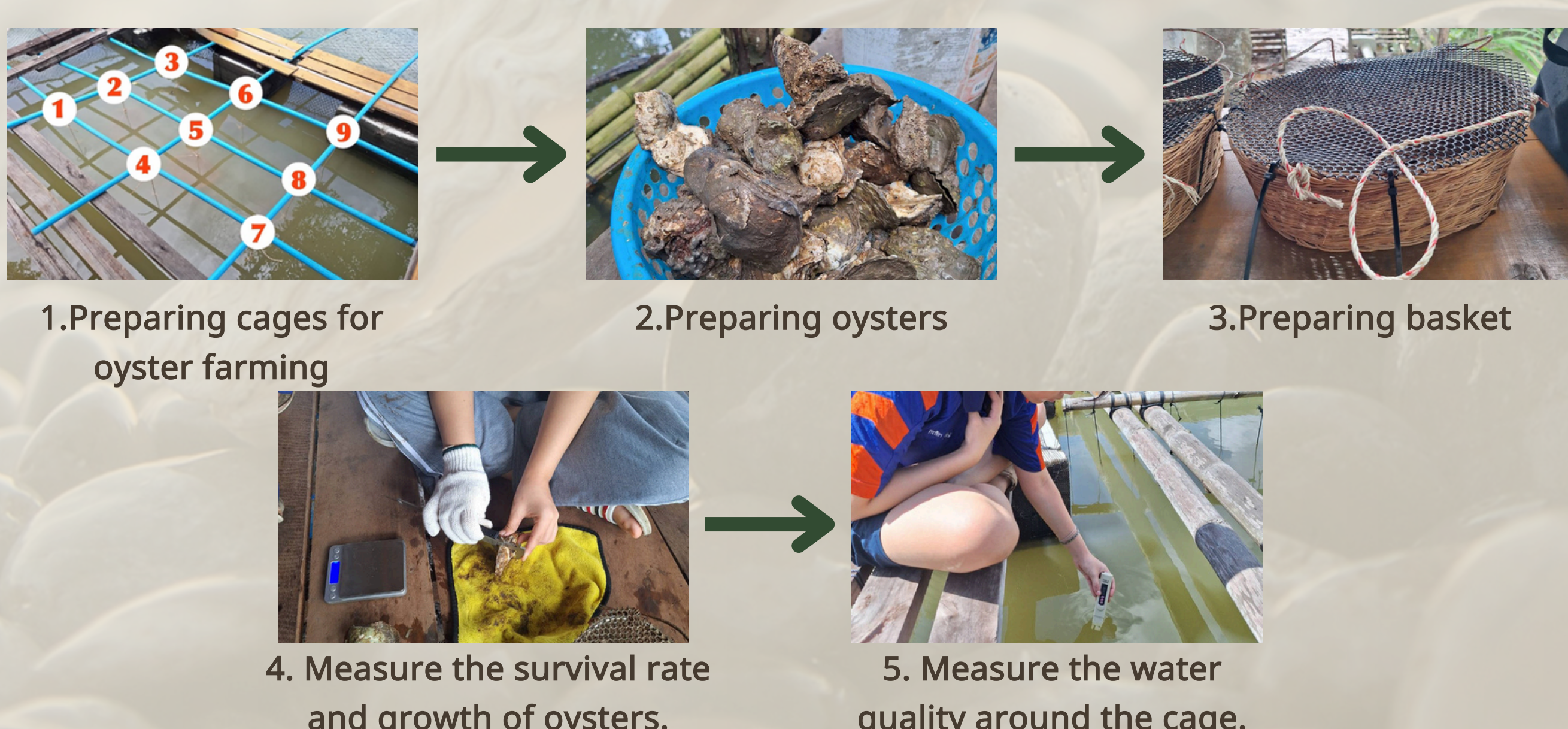
study site

Ban Tae Ram, Kantang, Trang Province.
Coordinates 7°18'53"N 99°29'34"E

equipments

Plastic basket   Iron basket   Woven basket   rope   Oyster cages   Oysters

Vernier caliper   Electric scale   universal indicator   salinity meter   termometer   TDS meter

methodology

1.Preparing cages for oyster farming
2.Preparing oysters
3.Preparing basket
4. Measure the survival rate and growth of oysters.
5. Measure the water quality around the cage.

Result

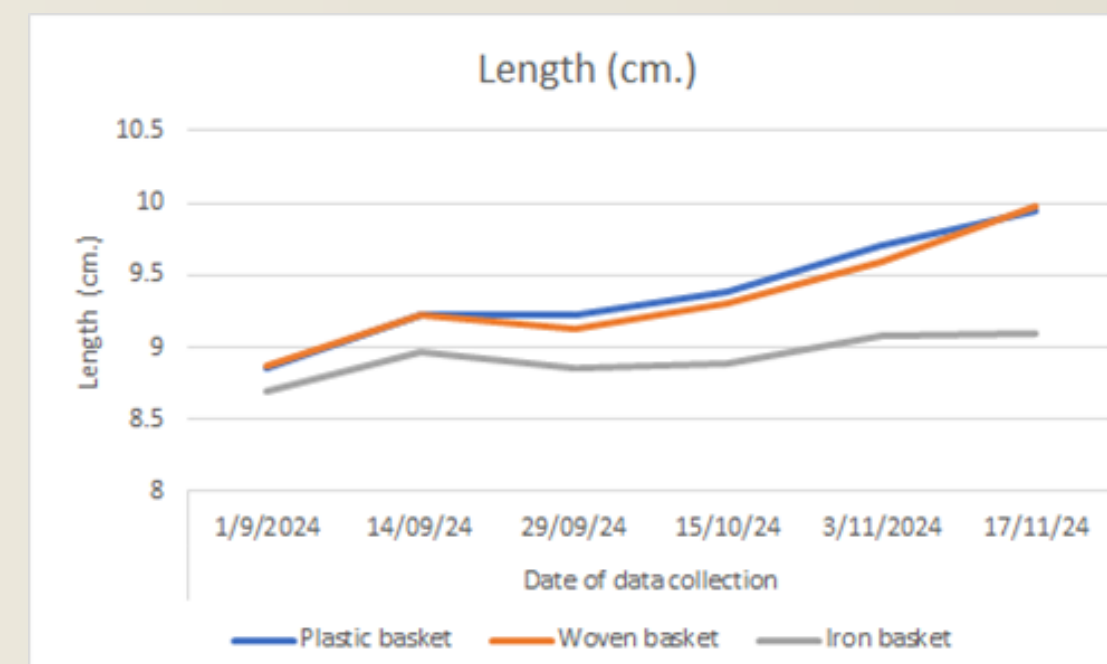• **Results of the study on survival rate and growth of oysters**

Chart 1.1 shows the change in length of oysters in different baskets.
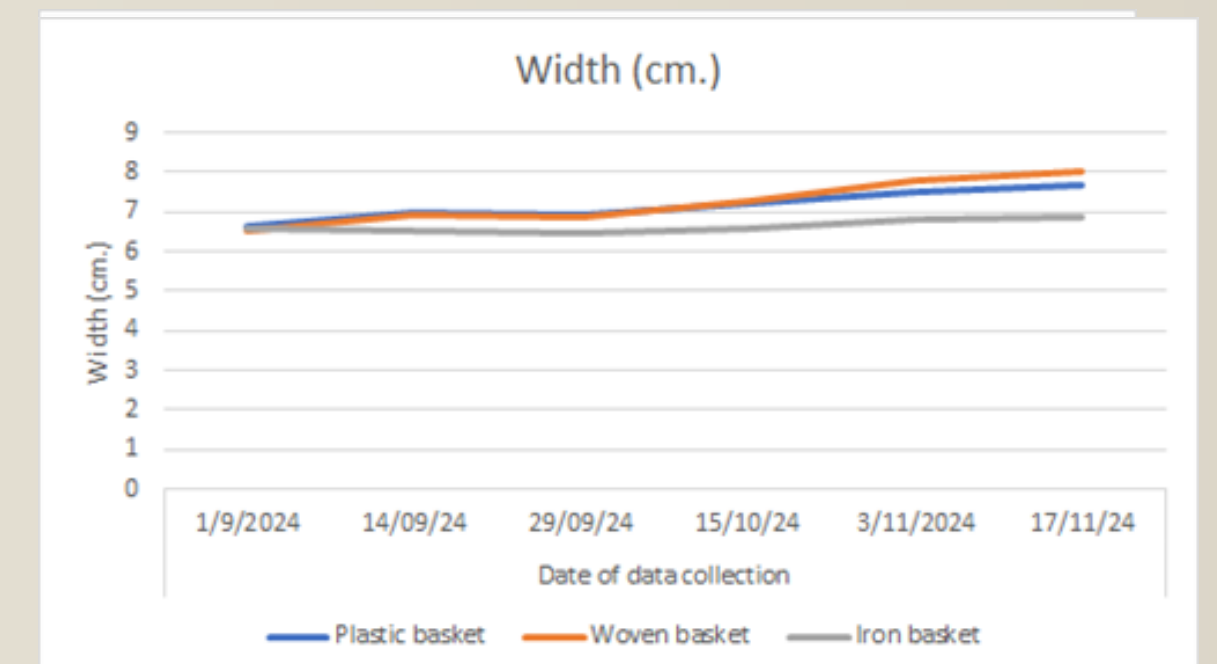

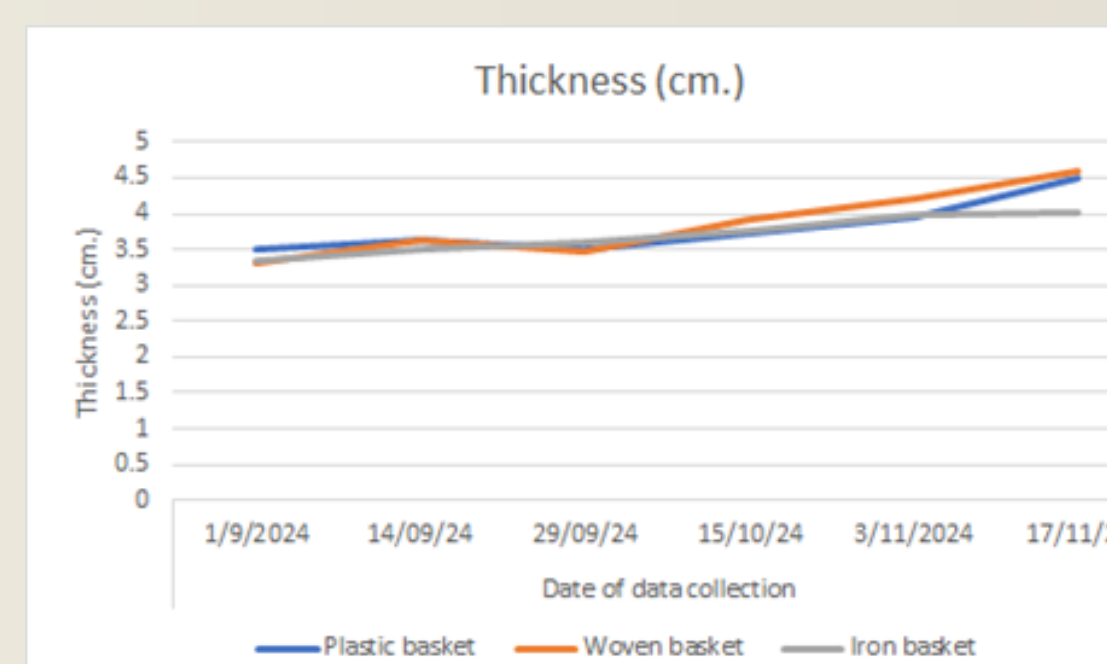Chart 1.2 shows the variation in width of oysters in different basket types.

Chart 1.3 shows the variation in thickness of oysters in different baskets.
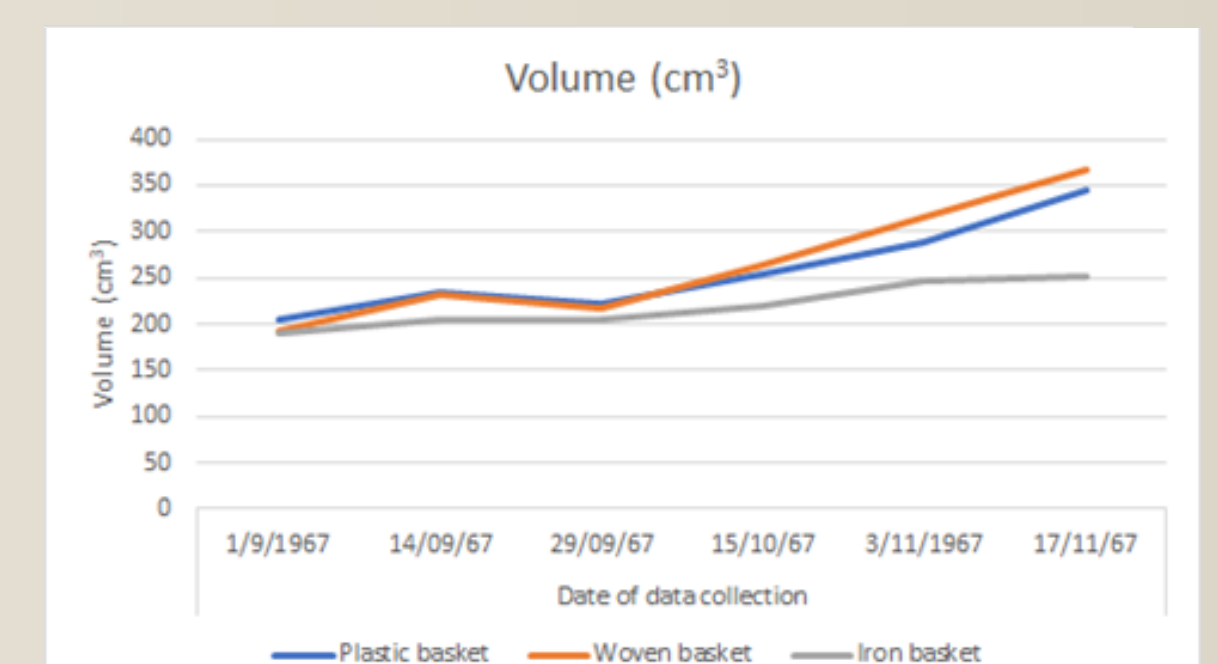

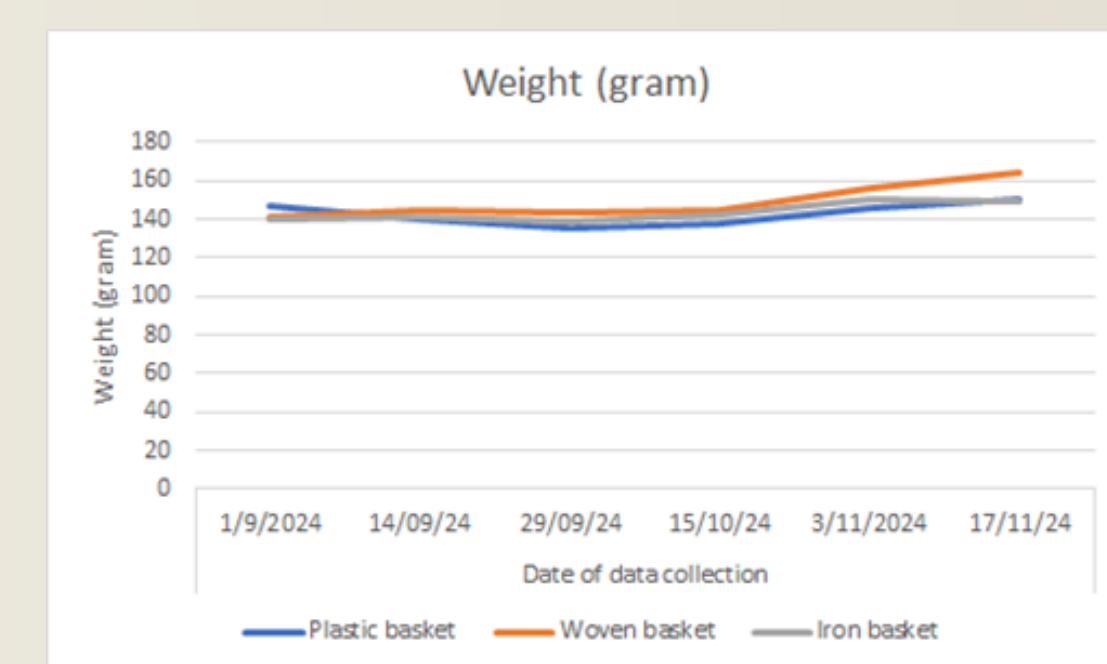Chart 1.4 shows the change in volume of oysters in each type of basket.

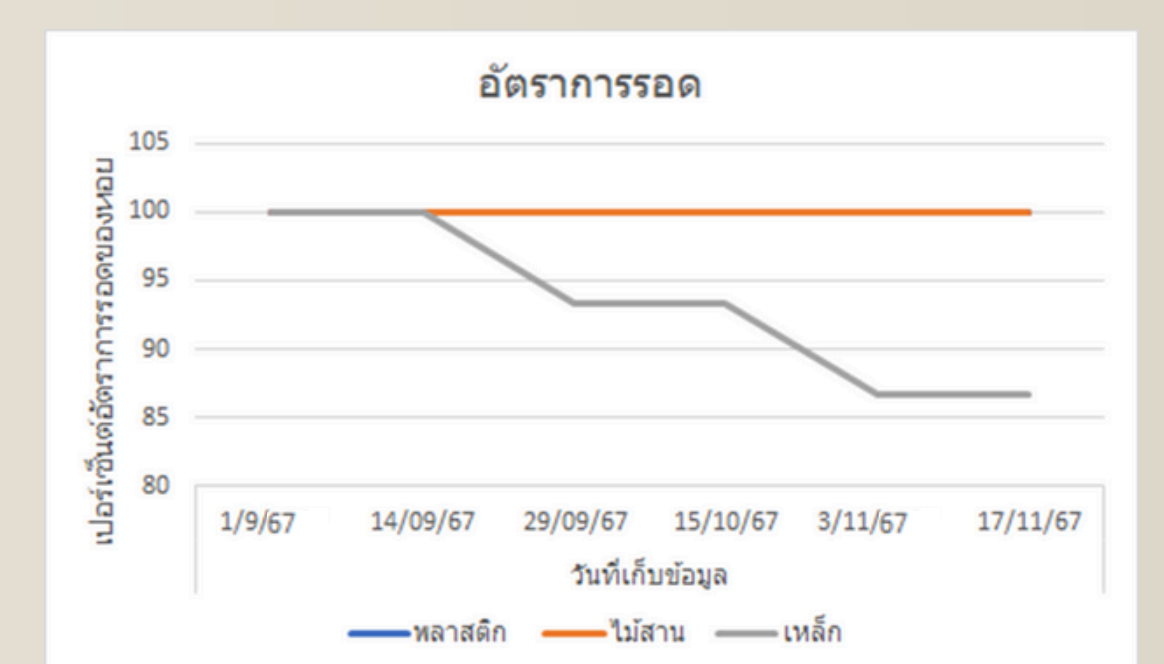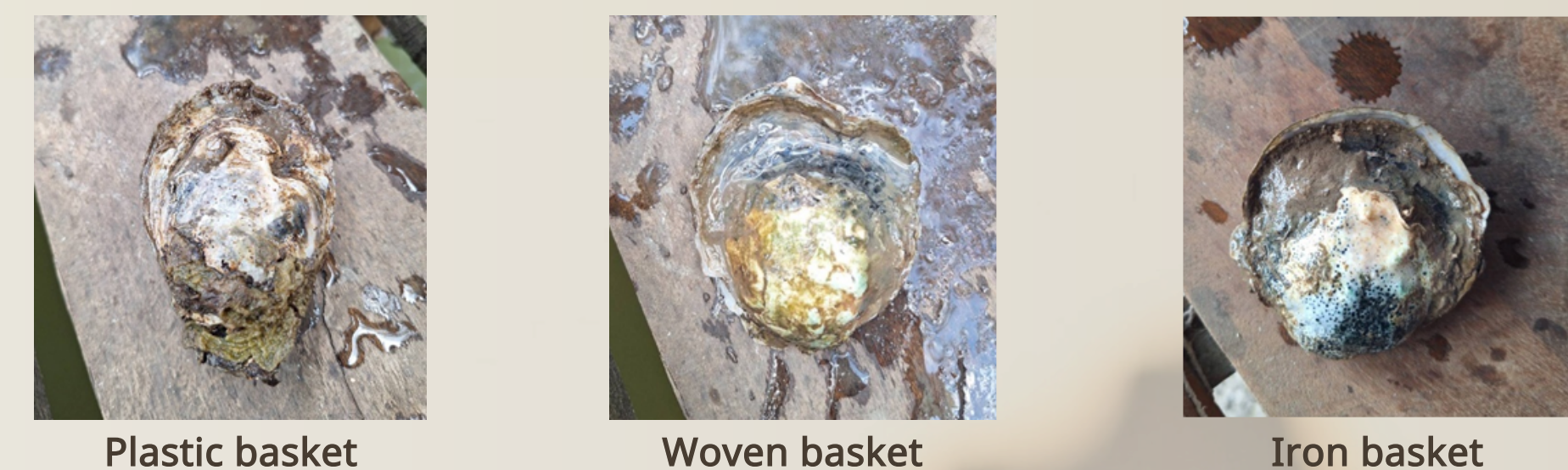Chart 1.5 shows the change in weight of oysters in each type of basket.

Chart 1.6 shows the survival rate of oysters in each type of basket.

• **External appearance of oysters**

Plastic basket   Woven basket   Iron basket
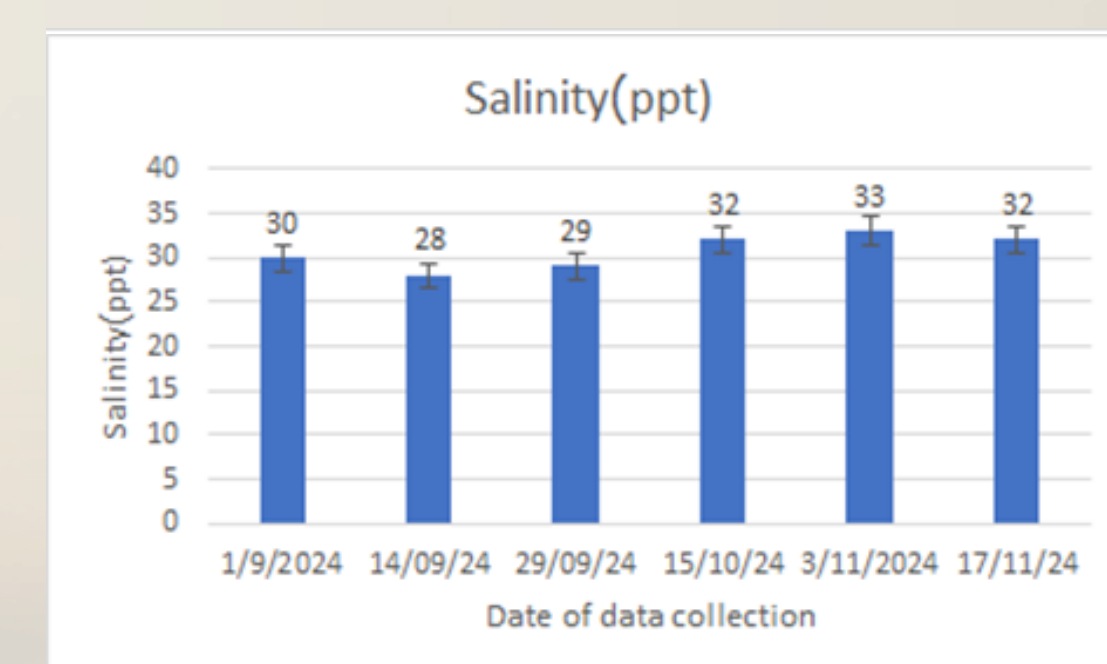
• **Water quality study results**

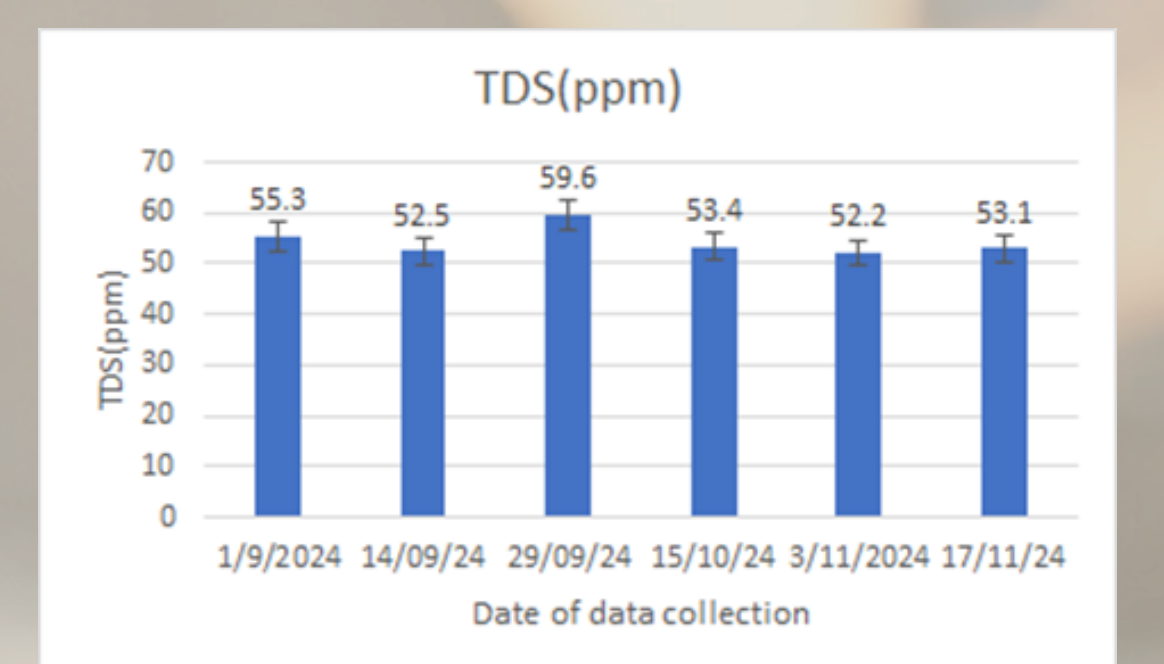Chart 1.7 shows the salinity of water around the cages.

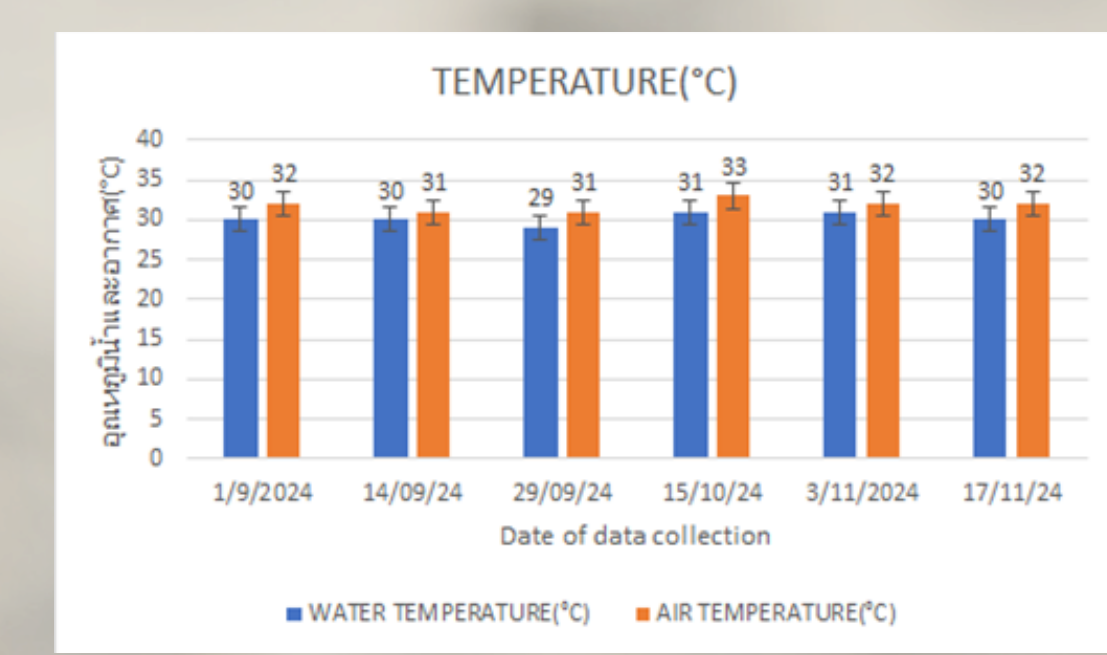Chart 1.8 shows the TDS value of water in the cage area.

Chart 1.9 shows the water and air temperature values around the cages.
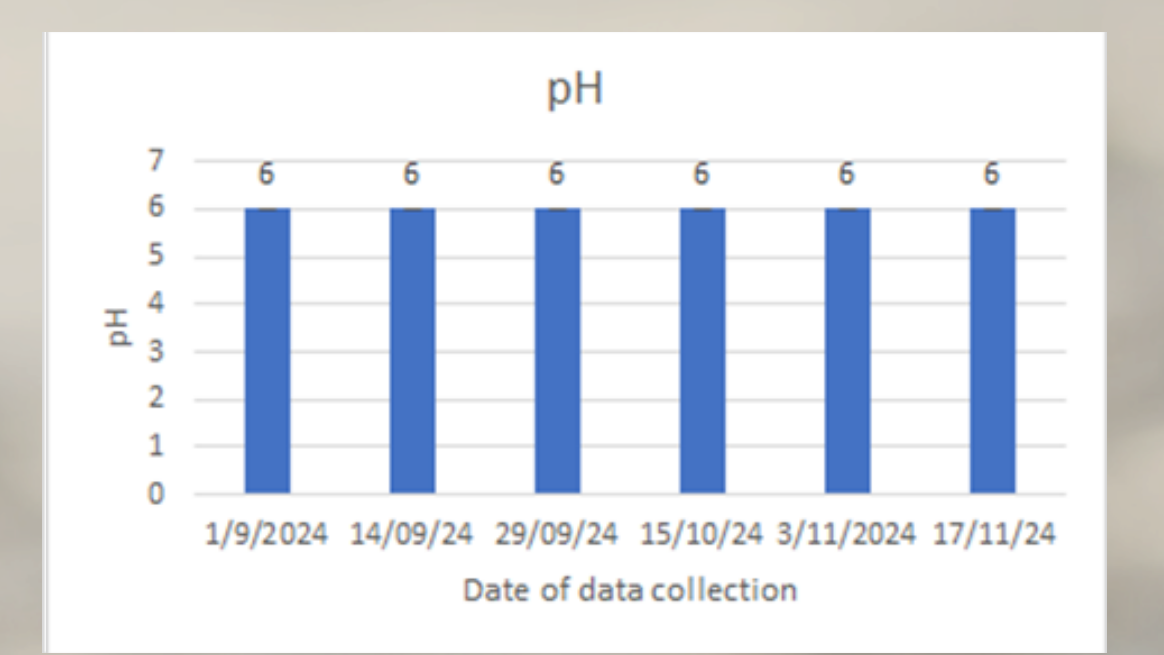

Chart 1.10 shows the pH value of the water in the cage area.

Summary

The study found that oysters grown in woven baskets had the best growth, followed by plastic baskets and iron baskets, respectively. In terms of survival rates, the survival rates of woven baskets and plastic baskets were the same, at 100%, while the iron basket had a survival rate of 86.67%. The external appearance of the oysters showed that the oysters in the woven baskets had smooth shells with few pores.In the plastic baskets, the oyster shells had moderate pores, and in the iron baskets, the oyster shells were very rough.With many pores, all water quality values were within the standard range, suitable for raising aquatic animals, allowing aquatic animals to grow to their full potential. The results of the study can be used as a guideline for selecting the type of container material for raising oysters efficiently, in order to increase production and reduce losses for farmers.

กิตติกรรมประกาศ