Types of fertilizers that affect the growth of sea grapes

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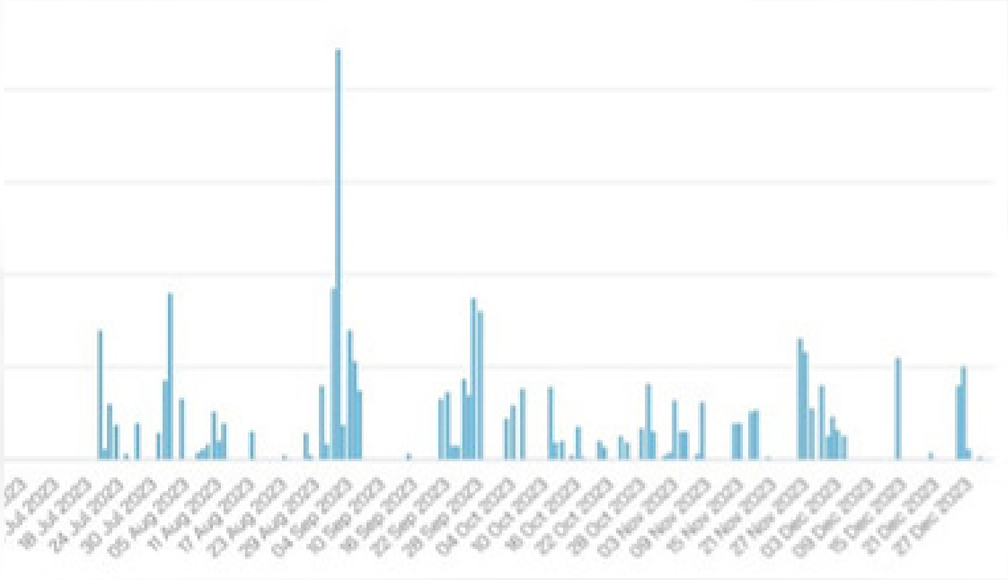
Introduction



"A graph showing the amount of rainfall throughout the year."

Sea grapes (*Caulerpa lentillifera)*

Sea grapes cultivation

Introduction

Chemical fertilizer

Organic fertilizer

Research questions

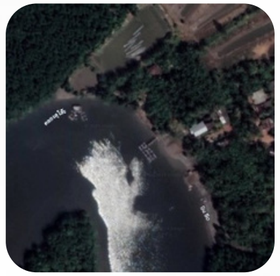
1. Which type of fertilizer is most suitable for the growth of sea grapes?
2. Does each type of fertilizer affect the water quality of growing sea grapes ?

Hypotheses

1. Biofertilizer is most suitable for the growth of sea grapes.

2. Each type of fertilizer affects the water quality of growing sea grapes .

Method



Survey data

7°10'23"N 99°40'36"

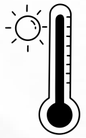
RMUTSV TRANG
7°31'27"N 99°20'09"E

Study environmental data using the GLOBE (Water Protocol) method.

Study factors affecting the cultivation of sea grapes

Light intensity
1000-3000 lux

pH 8-9



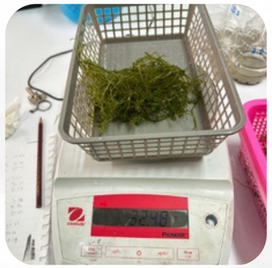
25-31
degrees

DO > 3ppm.

Salinity
25-35 ppt.

Plan an experiment.

Cultivate and nurture sea grapes.



Collect data
(average weight,
average branch length).

Analyze the experiment results.

Method

Plan an experiment.

Plan the experiment completely randomly (Completely Randomized Design: CRD). Divide the experiment into 6 experimental sets, each set of 3 replicates as follows:

T1 fertilizer formula 16-20-0

T2 bat guano

T3 urea

T4 bio-extract

T5 cytokinin hormone

T6 control sets (non-fertilizer)

Method

Cultivation and Data Collection

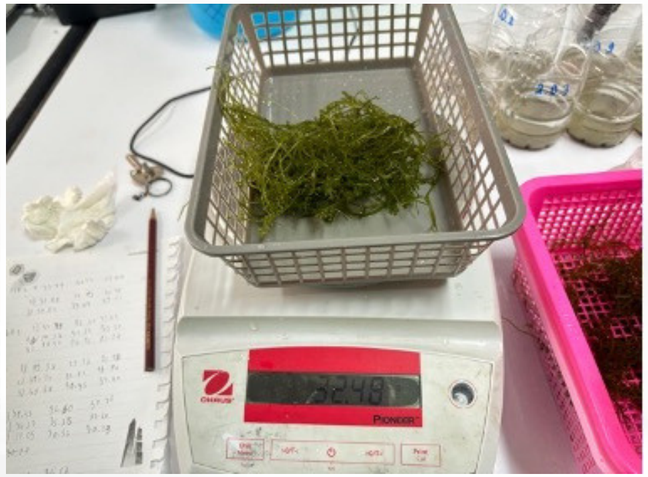
- maintain the salinity of the water not more than 35 ppt.
- Keep the water in the basin at a height of 30 cm.
- Change the water once a week
- Use fertilizer with a concentration of 5 ppm per week in every experimental set.

- Select healthy seaweed varieties.
- Weight of sea grape 25 grams per basket.

Method

Cultivate and collect data

Measuring growth Measure growth every 7 days.



Weigh the sea grape (gram)

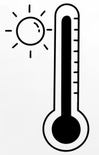
measure the length of the sea grape (millimeter)

Method

Cultivation and Data Collection

Measuring water quality Measure water quality daily, including:

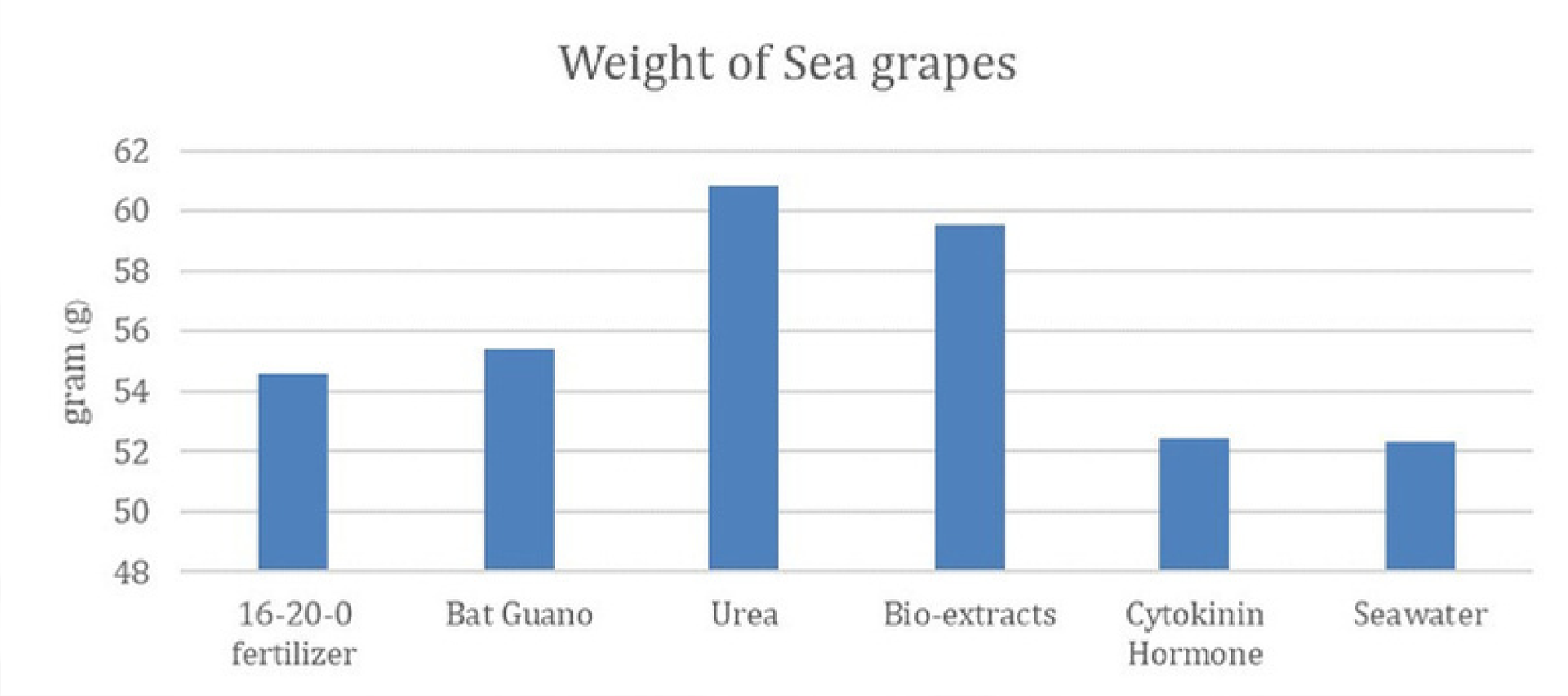
-Salinity
-pH
-Water temperature
-Water surface temperature
-Dissolved oxygen (DO)

Results

Sea grapes growth; average weight

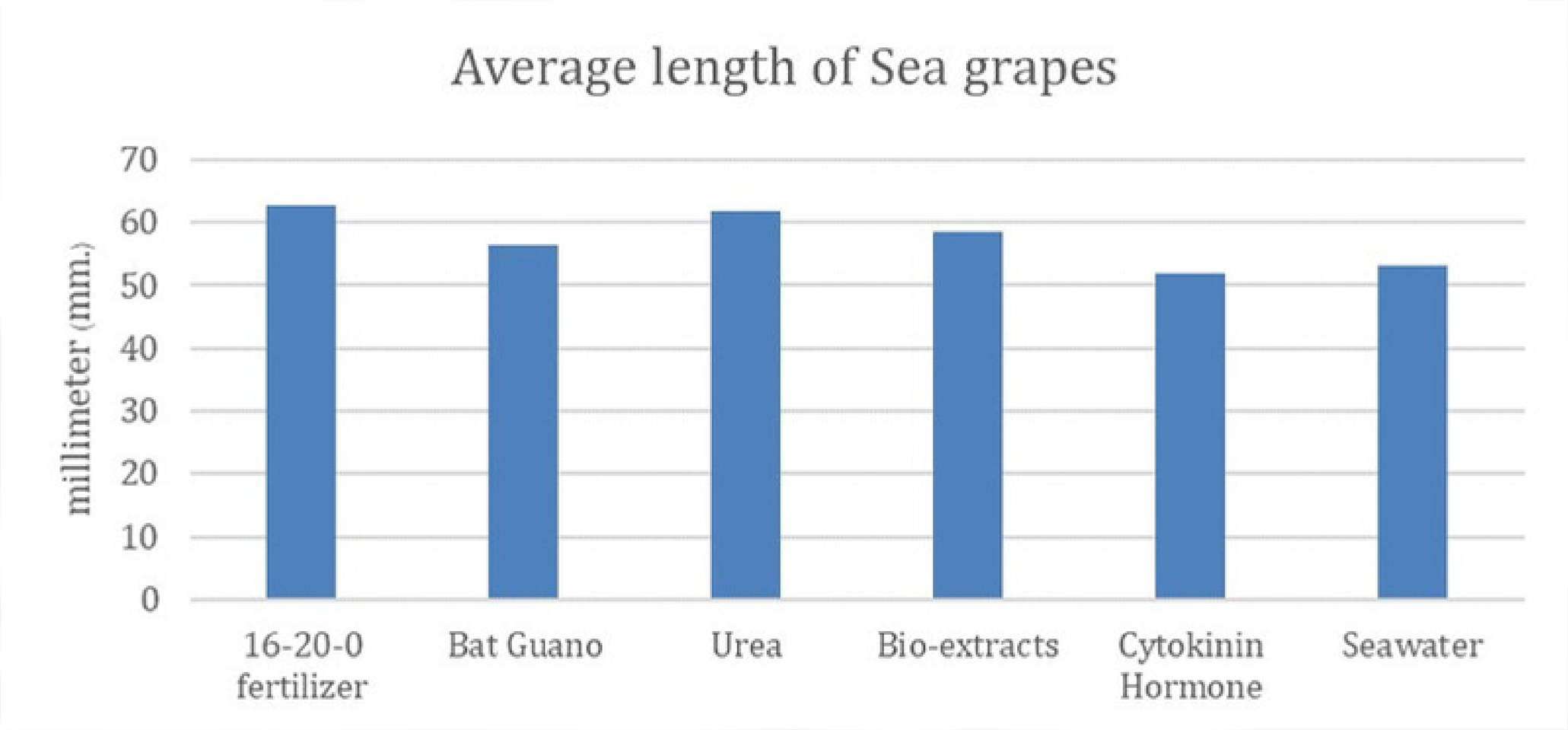
the average weight of sea grapes (grams) over a period of 4 weeks



Results

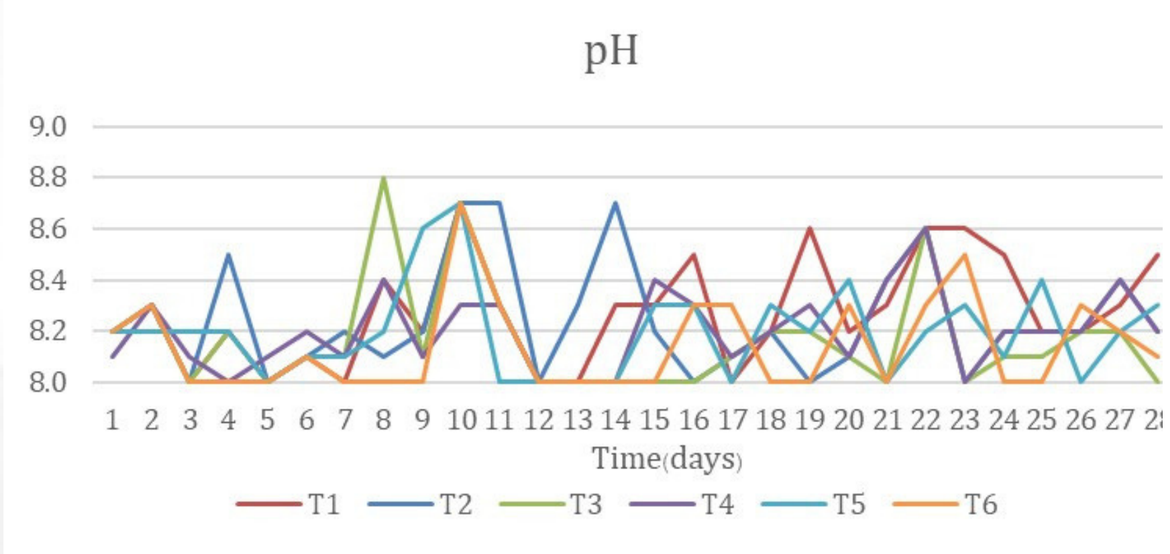
Sea grapes growth; average length

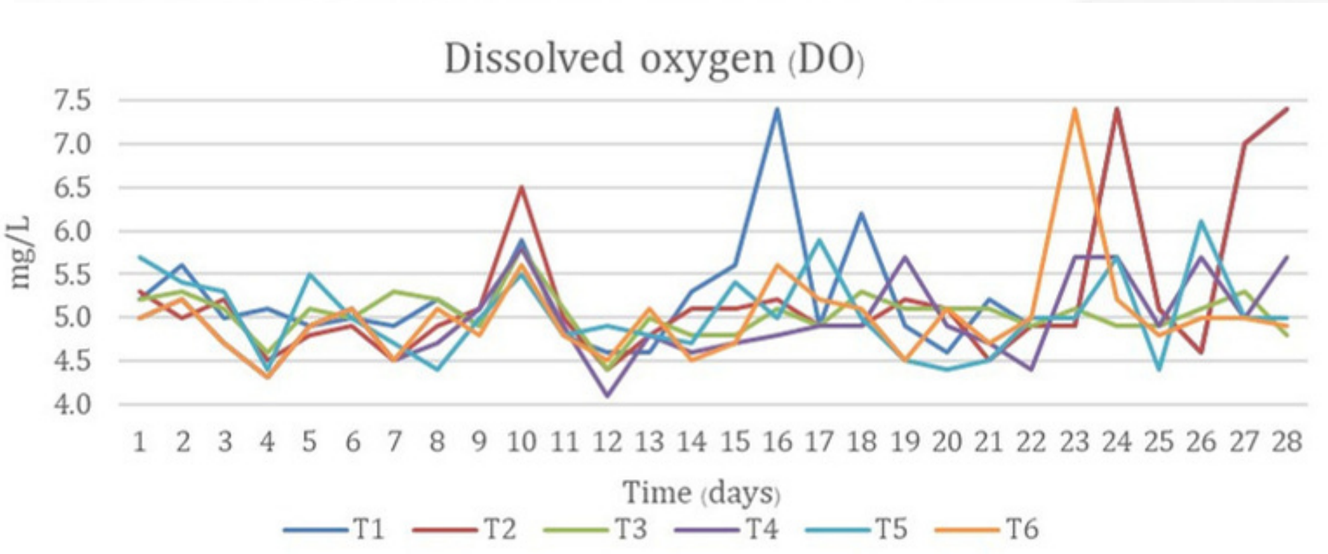
the average length of sea grapes (millimeter) over a period of 4 weeks



Results

The water quality



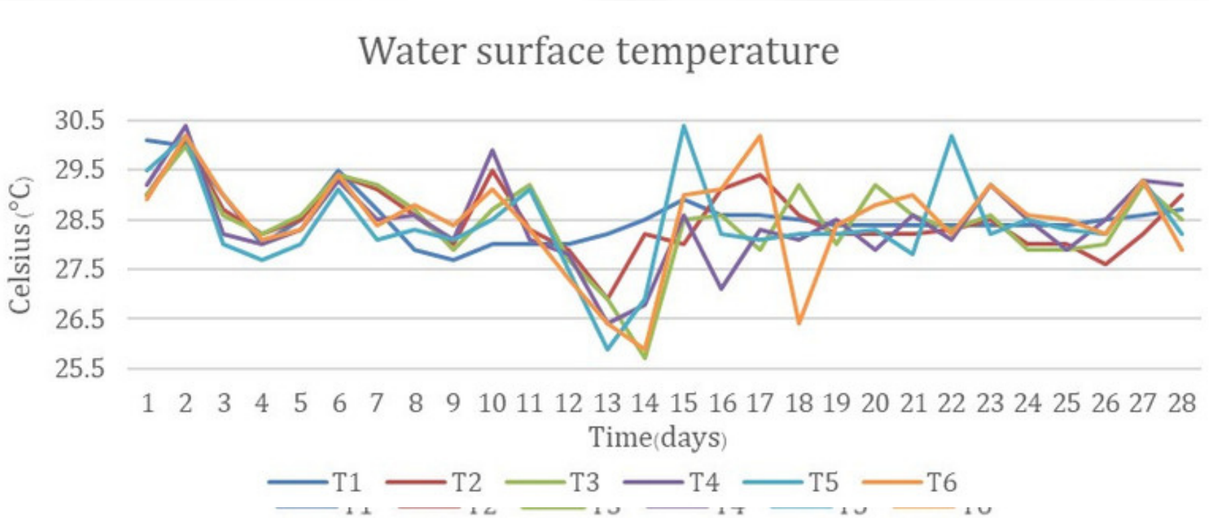


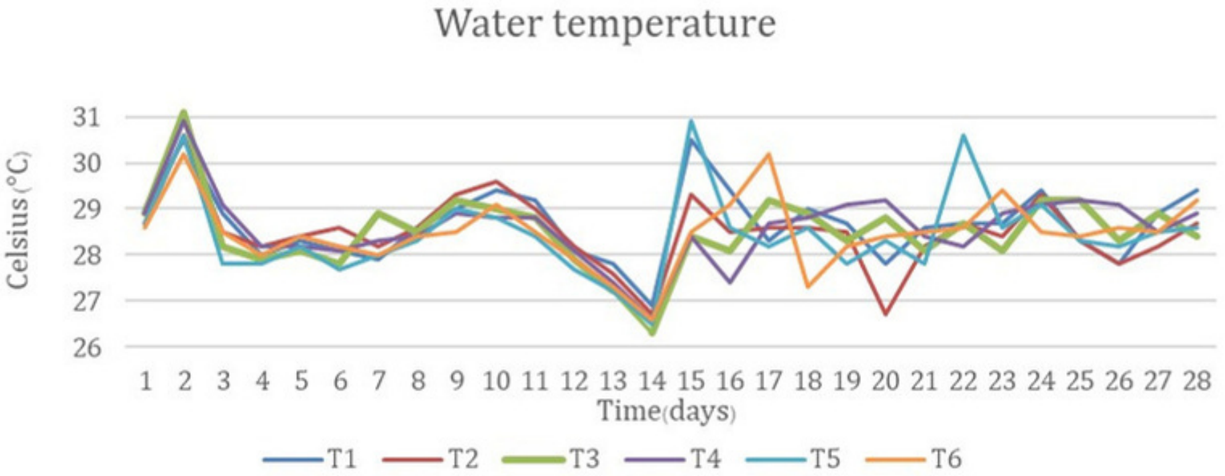
The pH values in each experimental set range from 8 to 9, which aligns with the suitable water quality for cultivating grape algae (pH 8-9).

The dissolved oxygen levels in each experimental set range from 4.1 to 7.4 milligrams per liter, which aligns with the suitable dissolved oxygen levels for cultivating sea grapes (4-8 milligrams per liter).

Results

The water quality





The temperature in each experimental set conforms to the suitable temperature range for cultivating sea grapes, which is 25-35 degrees.

Conclusions

Weight

Urea (Maximum)

AS

Bio-extract

did not differ significantly (P > 0.05)

Length

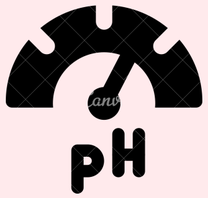
16-20-0 fertilizer

~~AS~~

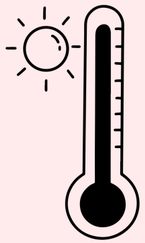
Bio-extract

differ significantly (P > 0.05)

Water Quality



pH 8-9



25-31 degrees

DO > 3ppm.

Salinity 25-35 ppt.

Bibliography/ Citations

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THANKS FOR WATCHING