

Research report

subject

Observing and water exploration, Spirogyra was found.

Rim the dam, the water rim of Bueng Khong Long

Prepared by

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preface

Research report on The observation and survey of the water properties of spirogyra algae was observed by the survey at the Mekong Long dam overflowing area on February 18, 2021. It is intended to be used to study and learn about spirogyra algae. This research conducted a survey and searched various information and documents. With a teacher who is advising Teacher Suthirat Srisongkram, Teacher Suthara Suthon and other advisors Research paper author Hopefully this book will be useful to those interested as needed.

If something goes wrong, the organizers must apologize here.

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Abstract

research

Subject of observation and exploration of water properties found in spirogira algae.

Research team: Nawin Saengpho, Salilaporn Nachai, Kanlathida Khurawan.

Advisor: Mrs. Suthirat Srisongkram

Miss Sutara Sukthon

Location: Bueng Khong Long Weir Bueng Khong Long District Bueng Kan Province

Subject research The objective of observing and exploring the water properties of spirogira algae was to study the water quality that spirogira was found in this research. From quality measurement by targeting specific selection Measured by temperature Relative humidity, water level and water PH monitoring are instruments used in the survey. Relative humidity instrument Temperature measuring instrument Water level meter PH measuring instruments

Concluded that The water quality in which spirogira can be found must have a pH greater than 8.0 - 9.0 and spirogira algae. Can indicate the quality of the water that Is the water of good quality? In the area where spirogira was found, PH was first measured at 8.0, the second was 8.5 times, 8.5 times, 9.0. Relative humidity is 38.06 degrees at 38 centimeters water level, temperature 29.7 degrees, PH and water level is higher than that of no spirogyra algae. In the area where no spirogira was found, PH was measured for the first time 6.5 times, the second time 7.0 times, the third time 7.5, where the relative humidity was not found at 40.37 degrees at 37 centimeters water level, temperature 30.16. Degrees latitude 17.95976 longitude 104.03466

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Chapter 1

Introduction

Background and importance of the problem

Bueng Khong Long is the world's 1,098th most important international wetlands with an area of 13,800 rai, located in Bueng Khong Long and Seka districts. Bueng Kan Province (WWF-Thailand) is a natural tourist attraction of Bueng Kan Province. It looks like a large lake that is a bird sanctuary. Especially waterfowl that migrate in winter include wild goose, teal, kingfisher, kingfisher, and a prominent attraction is Bueng Khong Long Park. A resting and viewing spot with a bird-watching tower and a viewing terrace. Especially in the evening when the sun is going to set, the atmosphere is very beautiful. In addition, if you come to visit in summer, you will see Kham Somboon Beach, beautiful sand dunes With long sandy beaches, Bueng Khong Long is a lake that has water all year round. Makes it possible to travel all year round. An interesting activity is taking a scenic boat ride around the lake. Experience nature and beautiful streams in the area around Bueng Khong Long.

Lifestyles of the people of the Mekong Long Bueng Khong Long Most of the people of the Mekong Long River are raising animals, farming, growing plants, rubber plantations, and various agricultural activities. Food Culture The main food of the Bueng Khong Long people is rice, food, cooking utensils and storage. The food is the same as the main dish, the fermented fish, which is a salted fish. And bran or roasted rice can be used to cook many types of food and there is also another type of food that is popularly eaten. Laab Tao (Spirogyra) is commonly used in cooking. spirogyra, which is easily found along Thung Canal and Kholong Lake, is used for collecting and eating spirogyra, often stored in water sources. Eat fresh Or used to be boiled, eaten with chili, or used for cooking, such as seaweed salad, soft-boiled eggs, and sour curry, etc. The nutritional value, percentage of dry weight, contains protein 18.63-23.76%, fat 2.86-5.21%, carbohydrate 53.98-56.31%, fiber 6.24-7.66% and ash 11.78%.

In addition, Spirogyra algae have also been used to study in research on the protective effect of gastric ulcers. Characteristics of Spirogyra or Gray Water Spirogyra or gray water is a green freshwater algae that feel slippery in the hand, often found floating in a raft or attached to objects. It looks like a line, not branched, bright green, covered with mucus. Inside the cell there is a nucleus in the middle. Food can be produced by photosynthesis due to the spiral-shaped chloroplasts on the chloroplasts, the pyrenoid accumulates food in a row. And there is a septum between the cells of the algal plane. Or looks like a casing around the junction between cells. Currently, Spirogyra algae is very rare. It is caused by the water in Bueng Khong Long. There is a very poor water quality. It is a great result of the use of chemicals in the cultivation of various types of plants. Or animal husbandry. Causing chemical contaminants to flow into the Mekong Long wetlands.

1.2 Research questions

1. How does Spirogyra tell the water quality?
2. PH value, relative humidity, water level, temperature in the found area is different from the one not found?

1.3 research objectives

1. To compare the quality of water found, how did Spirogyra differ from the area that was not found?
2. To study the PH value, relative humidity, water level, temperature, where the Spirogyra was found and the area not found.

1.4 Research scope

- scope of content

Study of water properties found in spirogyra algae.

- The population of this research is

Spirogyra algae The dam overflowing dams in the Mekong Long River area.

- The sample is

spirogyra algae group

1.5 Definitions

- spirogyra (Tao Nam) has the scientific name spirogyra and its common name is "Tao Nam Tao Kai or Pak Tao" and we can find spirogyra in natural fresh water sources such as canals. Will find the area of still water, clean and clear

- Survey area Bueng Khong Long Weir Bueng Khong Long District, Bueng Kan Province

1.6 Expected benefits

- To study the formation of spirogyra algae.
- To be used to indicate the quality of clean water.
- To develop spirogyra algae can be used to raise additional income.

Chapter 2

Related documents

In the subject research Properties that cause spirogyra algae, the researcher has conducted research and related research as follows:

1. Documentation on Spirogyra algae.
2. Documents relevant to the research
3. Documents related to the survey.

2.1 Documents on spirogyra algae

Spirogyra or green algae are green freshwater algae belonging to the Division Chlorophyta scientific name spirogyra and the common name "Tao Nam Tao Kai or Tao Gai" and we can find it. Spirogyra can be found in natural fresh water sources such as canals, and can be found in calm, clear water in the north. Northeast And western Thailand Spirogyra in a natural hilltop water pond Which the villagers prefer to collect Spirogyra is thoroughly washed and eaten fresh. Or bring it blanched and eaten with chili Or use it for cooking, for example, using seaweed to make spicy salad, deep fried with egg, and sour soup. Most of the villagers know it and consume it as a local food. Because it has a high nutritional value It consists of carbohydrates, fats, proteins, vitamins and minerals. In addition to the nutritional value of food. Also has biological activity The water extracted from spirogyra algae has antioxidant activity. Has an anti-inflammatory effect. This will help moisturize the skin and reduce the appearance of wrinkles. And more importantly, it also has an activity against the enzyme "Tyrosinase", which causes blemishes, freckles and dark spots.

At present, Asst. Prof. Dr. Yuwadee Peerapornpisan, Department of Biology Faculty of Science Chiang Mai University Saw the importance of many types of green freshwater algae, including spirogyra algae There is a project to develop green freshwater algae to be more widely known. Both in the form of food from folk wisdom and processed into various

products To add variety It will also promote it to be accepted in the market so that it can be sold more, not just in small communities, including studies on the extraction of biological compounds in algae for use in the treatment or enhancement of immunity. Which the research team of Asst. Dr. Yuwadee Peerapornpisan will present the progress of the said project in the future. If farmers are interested in growing more spirogyra algae, it will help restore and maintain the natural water supply to be more clean since spirogyra is a freshwater algae that grows well in water sources. Clean In addition to promoting career for local farmers It can also help conserve the local environment as well.

2.1.1 Documents relevant to the survey

Related tools include

- An instrument to measure the PH value of water.
- Relative humidity measuring instrument
- Water level measurement tool
- Temperature measuring tool

2.2 Related research

Study on high yield algae cultivation (T.P.4.3.1.17 - Mae Jo University)

To study the nutrients found in soil, water sources and animals cultured commercially at Ban Na Khuha, Muang District, Phrae Province, in the cultured area for comparison with the non-cultured areas together with the study of growing species. The ratio of nutrients in gray algae was used to assess the amount of minerals needed for the growth of algae, such as carbon, nitogen, other physical products that resulted in high yields. Physical and acoustical methods were cultured kiln algae with factors studied in aquaculture ponds, water levels

and furrows, and areas where algae did not grow, including areas that had never been raised before.

2.2.1 Documents related to the survey

Related tools include

- An instrument to measure the PH value of water.
- Relative humidity measuring instrument
- Water level measurement tool
- Temperature measuring tool

Chapter 3

Methods of conducting research

3.1 Research on water properties found for spirogyra algae

Researchers have conducted research. Follow the steps as follows

3.2 Research plan

This research is research-oriented Quantitative and qualitative

is intended to Study of the properties of water that influence the formation of Spirogyra.

3.3 Population / Sample

Population: Spirogyra

Samples: PH value, temperature, spirogyra algae.

3.4 Research tools

The tools used in this research include

- PH measuring instrument
- Relative humidity measuring instrument
- Temperature measuring tool
- Water level measurement tool

3.5 The process of creating each type of tool

- The PH measuring instrument was measured as a color calibration indicator by using the principle of measuring the electric potential in the solution even though it was found.

Spirogyra algae and no spirogyra algae were found.

- Relative humidity measuring instrument Measure the temperature or relative humidity in the air.

- Temperature measuring tool Measure the temperature of water and air.

- Water level measurement tool Water level measured at latitude 17.95976, longitude 104.03466.

3.6 Conducting research / data collection

- Determination of PH, temperature, water level, relative humidity Collect data 3 times.

- Location of latitude is 17.95976

- Longitude position is 104.03466

- The study period for the data on February 13, 2021 in the area of the Bueng Khong Long Dam area.

3.7 Data analysis

Objective 1

- Analyze how spirogyra can tell the water quality

- Analyze the PH value, relative humidity, water level, temperature of the found area different from the one not found.

Chapter 4

Research results

4.1 Research results according to objective 1

Water quality found for spirogyra and water quality found for spirogyra were different, cultivated in the area where spirogyra was found had PH value of alkalinity more than the one not

4.2 Research results according to objective 2

Areas where spirogyra was found and areas where spirogyra was not found had different PH values, relative humidity, water level, and temperature as shown in the table below.

Observation and survey table of water quality

Water properties								
Areas where spirogyra is found					Areas where spirogyra is not found			
The time	PH value	Humidity relatively	Water level	Temperature °C	PH value	Humidity relatively	Water level	Temperature °C
1	8.0	35.56%	38	28.06 °C	6.5	37.87%	37	29.16 °C
2	8.5	38.06%	38	29.06 °C	7.0	40.37%	37	30.16 °C
3	9.0	40.56%	38	30.06 °C	7.5	42.87%	37	31.16 °C

Chapter 5

Research findings

5.1 research objectives

1. Study the factors affecting the formation of spirogyra algae.
2. Study the quality of water found with spirogyra algae.

5.2 Population / Sample

Population: Spirogyra

From research into the properties of spirogyra algae There are instruments that can measure the water properties of the spirogyra algae, as follows:

1. PH measuring instrument
2. Relative humidity instrument
3. Temperature measuring instrument
4. Water level meter

From the research using the above 4 measuring instruments, it was found that the area where the spirogyra was found, the PH was 8.0 times the first, 8.5 times, the third was 9.0, the PH value was higher than the area that did not. Found spirogyra algae. In the area where the spirogyra was not found, the PH was measured for the first time 6.5 times, the second time 7.0 times, the third time 7.5, where the relative humidity of the spirogyra was found at 38.06 degrees at the water level of 38 meters. 29.7 degrees, the area not found. The relative humidity of spirogyra algae 40.37 degrees at 37 centimeters water level and temperature 30.16 degrees.

In the research using all 4 types of tools, it was found that the area where spirogyra was found had alkaline water properties, namely the PH value of 8.0 - 9.0.

5.3 Discussion

From the study of water properties, spirogyra algae were found. The results were discussed as follows: The areas where spirogyra were found had higher PH and water levels than those with no spirogyra, but relative humidity and temperature. Lower than the area where spirogyra was not found

5.4 Recommendations

5.4.1 Suggestions for this research

1.1 Should take more time to explore For resolution in research work

1.2 Should use tools that have a resolution to measure various values.

1.3 You should study more information than you have studied.

5.4.2 Further research proposal

2.1 The benefits of spirogyra should be studied more than this.

2.2 Should study the method of data collection in more detail.

Bibliography

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Annex

The spirogyra are thin, fibrous, formed by a series of cylindrical cells without branching, 90-110 μm long, 40-50 μm wide, with mucus covered inside the cell, centered on the nucleus. They can create their own food by using photosynthesis. Contains protein 18.63-23.76%, fat 2.86-5.21%, carbohydrate 53.98-56.31%.



