Patchai Thang Kaiyaphap Thi Mi Phon To Kan Charoen Toepto ,Khok Lo Subdistrict, Mueang District, Trang Province , Thailand

WICHIIENMATU SCHOOL

THE GLOBE PROGRAM
Global Learning and Observations to Benefit the Environment

Abstract

This research studies physical factors affecting lotus growth. The objective is to investigate these factors using the Globe Project method. Results show that water quality is good.

Research Question

Does water quality affect the growth of lotus plants?

Introduction

Content Knowledge

Lotus ponds are important water sources for the people, both economically and for their livelihoods. Specifically, selling lotus flowers generates income for people in the community. In addition, lotus flowers are used in daily life and cultural activities. The growth of lotus depends on the water conditions and water quality in each area. If the water quality changes... This may affect the growth of the lotus plants. Aquatic ecosystem And the biodiversity of the living things within the lotus pond; most lotus ponds are natural freshwater sources. Water remains throughout the year, even during the dry season. Therefore, it is a water source that plays a vital role in the ecosystem and the survival of many species of living things. Water quality in lotus ponds is therefore an important factor that needs to be properly maintained. Because some water quality parameters cannot be observed with the naked eye. Scientific measurements are necessary to assess the true value of water resources. This research therefore aims to study the physical water quality of the lotus pond along with the biodiversity within the lotus pond. This information will be used to monitor potential impacts on the growth of lotus plants. And the aquatic ecosystem. It also provides a guideline for maintaining water quality in a balanced and suitable condition for the growth of lotus. This is important for people today. The researchers were therefore interested in studying the physical factors that affect the physical diversity in the lotus ponds of Suksan Village. Khok Lo District Trang Province To obtain information that can be used to conserve and develop community water resources sustainably.

Research Methods

Planning Investigations
Describes the planning process

- Select sampling points and survey areas of the water source.
- Study physical factors affecting lotus diversity around the pond edge.
- Measure water temperature by immersing a thermometer 10 cm deep for 3–5 minutes and read at eye level.
- Measure soil temperature by calibrating the soil thermometer with a standard thermometer in water.
- Measure water pH by rinsing containers and using pH paper to compare colors.
- Measure soil NPK by loosening soil, inserting the probe, and reading the scale.
- Measure water transparency using a Secchi disk and record visibility depth.
- Measure relative humidity using a digital hygrometer.
- Measure dissolved oxygen by properly collecting water samples and testing within 2 hours.



Carrying out Investigations
Shows the geographical coordinats

Latitude (N)	Longitude (E)
7.5119422	99. 6125235

GLOBE BADGEF

I make an impact Addressing the water quality issues in the pond that may affect the lotus flowers, which are important to the community and those who trade in them for income, and also contribute to the preservation of Thai culture, as the lotus is the national flower of Thailand.

Results

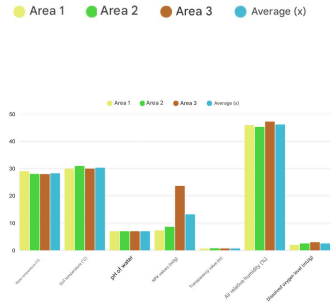
Analyzing Data

- A study of physical factors affecting the growth of lotus in Khok Lo Subdistrict, Mueang District, Trang Province

Table 9. Physical water quality analysis.

Print	Average(x̄)
Water temperature (°C)	28.3
Soil temperature (°C)	30.33
pH value of water	7.0
NPK values (ml / g)	13.21
Transparency value (m)	0.7
Relative humidity of the air (%)	46.2
Dissolved oxygen content (ml / g)	2.5

The bar chart shows the physical quality parameters of water.



Discussion

Interpreting Data

First and foremost, the researchers would like to express their sincere gratitude to Mr. Sakda Phaisomboon, Director of Wichienmatu School, for approving the educational research. budget. Special thanks are extended to Ms. Sutheera Thacheen and Ms. Sawitree Duangsook for facilitating the field research, providing invaluable consultations, and offering meticulous suggestions to improve and correct the study's shortcomings. Furthermore, we would like to thank Wichienmatu School for providing the necessary research equipment and facilities, which were instrumental in the smooth progression and successful completion of this study.

Conclusions

Drawing Conclusions & Next Steps

The study found that the water source used for growing lotus generally had fairly good water quality and was suitable for lotus growth. The water and soil temperatures were within appropriate ranges, and the pH was neutral, allowing the lotus to absorb nutrients effectively. The nutrient levels in the soil were relatively high, indicating good fertility of the water source. However, water transparency and dissolved oxygen levels were below standard, which may affect the ecosystem and lotus growth. Therefore, it can be concluded that physical factors clearly influence the growth of lotus, and certain aspects of water quality should be improved to enhance suitability.

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