

## **Comparison of water quality in Wichianmatu School**

**Student :** Miss Panatda Chaipak , Miss Pornsinee Khoonin and Miss Nawaporn Thongrong

**School :** Wichienmatu School Trang

**Teacher :** Miss Suteera Thachin

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### **Abstract**

Comparative study of water quality in 4 swimming pools in the area of Wichianmatu School by limiting the number of pools in the study The comparative study was as follows: Sra cha kiaw, Bor sala glang nam , Bor sanambas and Bor tonsai. The indexes used were temperature, pH, and pH. water transparency and the dissolved oxygen value for comparison. The group has used the principles of GLOBE THAILAND to measure temperature, pH value, water transparency. and dissolved oxygen three times each time and take each measured index value The mean temperatures of the four pools were 28.6°C in Sra cha kiaw 26.3°C in Bor sala glang nam , 27°C in Bor sanambas and 26.3°C in Bor tonsai. The pH of the Sra cha kiaw was 5.5, and the pH of the Bor sala glang nam was 4.8. The pH of the Bor sanambas was 5.2 and the pH of the second pool was 5.2. 4 had an average of 4.8. Water transparency of Sra cha kiaw had an average of 107.5 cm. Water transparency of Bor sala glang nam had an average of 102.3 cm. The average water transparency in Bor sanambas was 102.3 cm, and the average water transparency in Bor tonsai was 103,8 cm, and the average dissolved oxygen value in Sra cha kiaw was 3.4. The average dissolved oxygen value for Bor sala glang nam was 3.4 cm. 7.3 Dissolved oxygen in Bor sanambas had an average of 4.1 and dissolved oxygen in Bor tonsai had an average of 7.9.

## **Origin and importance**

Water is the resource that is most important to the livelihood of people, plants and animals. But it is the least valuable compared to other resources. Water is therefore an important factor in human life, cooking and cleaning the body. used in agriculture clean water source It is a habitat for aquatic animals with biodiversity. In Wichianmatu School, Muang District, Trang Province, covering an area of about 300 rai, there are many pools within Wichianmatu School, such as Sra cha kiaw, Bor sala glang nam , Bor sanambas and Bor tonsai. These pools all suffer from water quality problems. Because there is still water source without drainage. There were fragments of leaves and twigs falling down causing rottenness, resulting in water in the area of Wichianatu School. To study the properties of water sources within the school for comparison and wastewater treatment.

## **Objectives of the research**

1. To compare water quality from 4 sources in the area of Wichienmatu School.

## **Research question**

Are there any differences between temperature, acidity-base, water transparency and dissolved oxygen in the 4 pools around Wichienmatu School?

## **Research hypothesis**

temperature, acidity - base, transparency of water and dissolved oxygen in all 4 pools of Wichienmatu School.

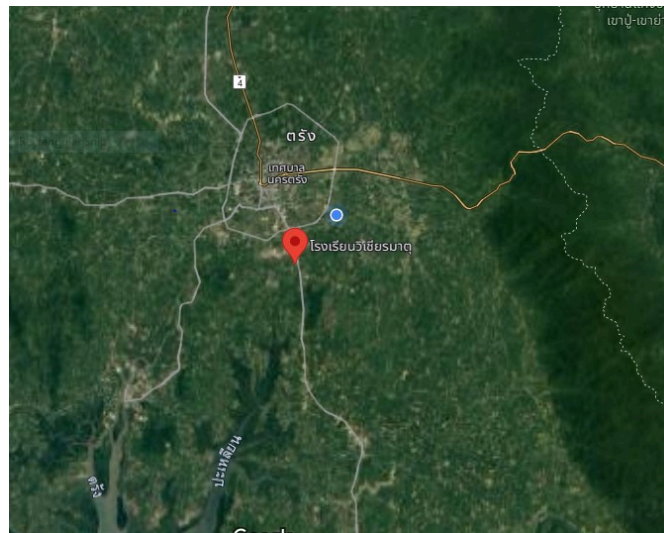
## Research method

### Equipment

1. Thermometer
2. Universal Indicator
3. pH meter
4. Pakorn Transparency Meter
5. DO reagents

### The study area

Pool in the area of Wichianmatu School, 4 pools, Khok Lo Subdistrict, Mueang District, Trang Province, Thailand (7 ° 30'13.6 "N 99 ° 37'45.8" E 703763, 99.629399)



➤ Wichianmatu School

### GLOBE protocol

1. Method for measuring water temperature
2. Method for measuring transparency of water

3. Method for measuring pH of water
4. Method for quantitative measurement Dissolved oxygen
5. Data transmission process

### **Water quality monitoring**

1. Measure the temperature of the water using a thermometer.
2. Measure the pH in the water using the pH Meter and Universal Indicator
3. Measure the transparency of the water.
4. Measure the oxygen in the water using the DO  
  - 4.1 reagent Collect the water sample into the cylinder and cover it under water. Be careful not to let air in.
  - 4.2. Drop 2 drops of #1 solution followed by 2 drops of #2. Be careful not to let air in.
  - 4.3. Shake while closing the lid. Until a yellow-brown precipitate appears, indicating that there is oxygen. Wait for the precipitate to fall about half of the cylinder.
  - 4.4. Drop 5 drops of drug #3, then close the lid and shake well. Wait until the precipitate is completely dissolved.

## Research results

Table 1 shows the temperature comparison of 4 ponds in Wichianmatu School.

Water temperature				
At the time	Sra cha kiaw	Bor sala glang nam	Bor sanambas	Bor tonsai
1	30	27	29	27
2	28	25	27	25
3	28	27	25	27
average	28.6	26.3	27	26.3

From Table 1, water temperature Found that the Sra cha kiaw with an average temperature of 28.6 ° C, a water hall, a temperature of 26.3 ° C, the pool on the side of the basketball, with a temperature of 27 ° C and the Sai pool with a temperature of 26.3 ° C

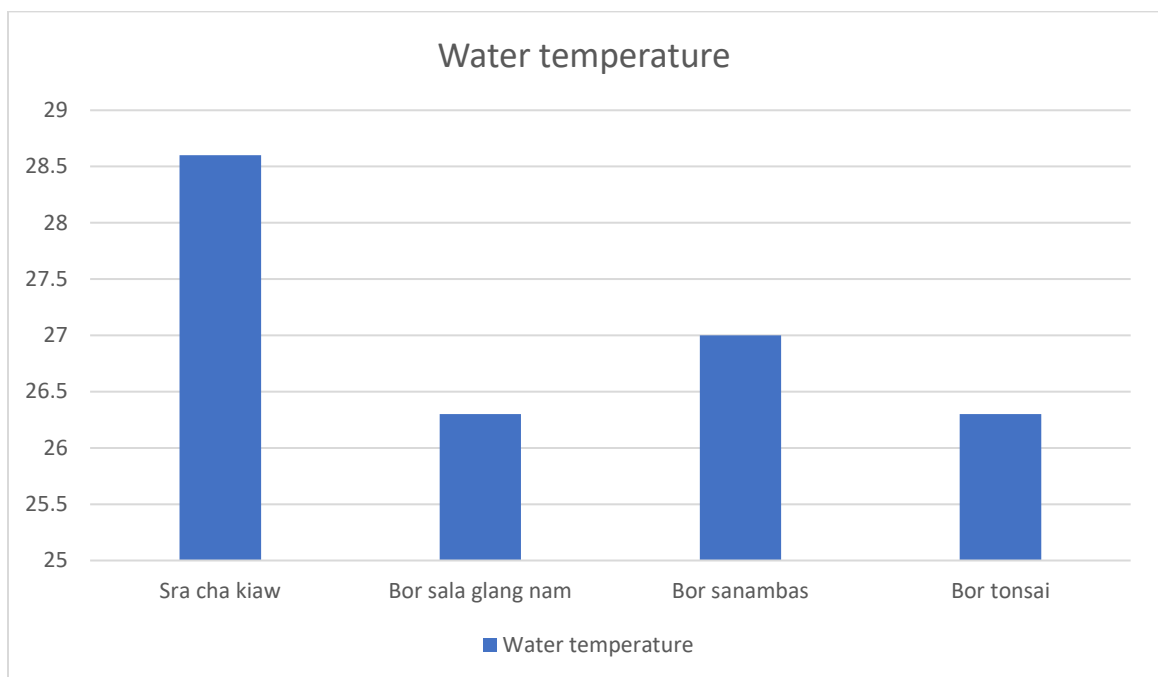


Table 2 shows the acid -base value of 4 ponds in Wichianmtu School.

Acid -base value of water				
At the time	Sra cha kiaw	Bor sala glang nam	Bor sanambas	Bor tonsai
1	5.5	4.9	5.2	4.8
2	5.3	4.7	5.4	5.0
3	5.7	5.1	5.0	4.7
average	5.5	4.8	5.2	4.8

From Table 2, acid -base value, found that the acidity -base value of the Sra cha kiaw is an average 5.5 acid -base value of the Bor sala glang nam, the average of 4.8, the acid -base value of the Bor sanambas the average of 5.2 and the acidity -base value of the Bor tonsai the average of 4.8.

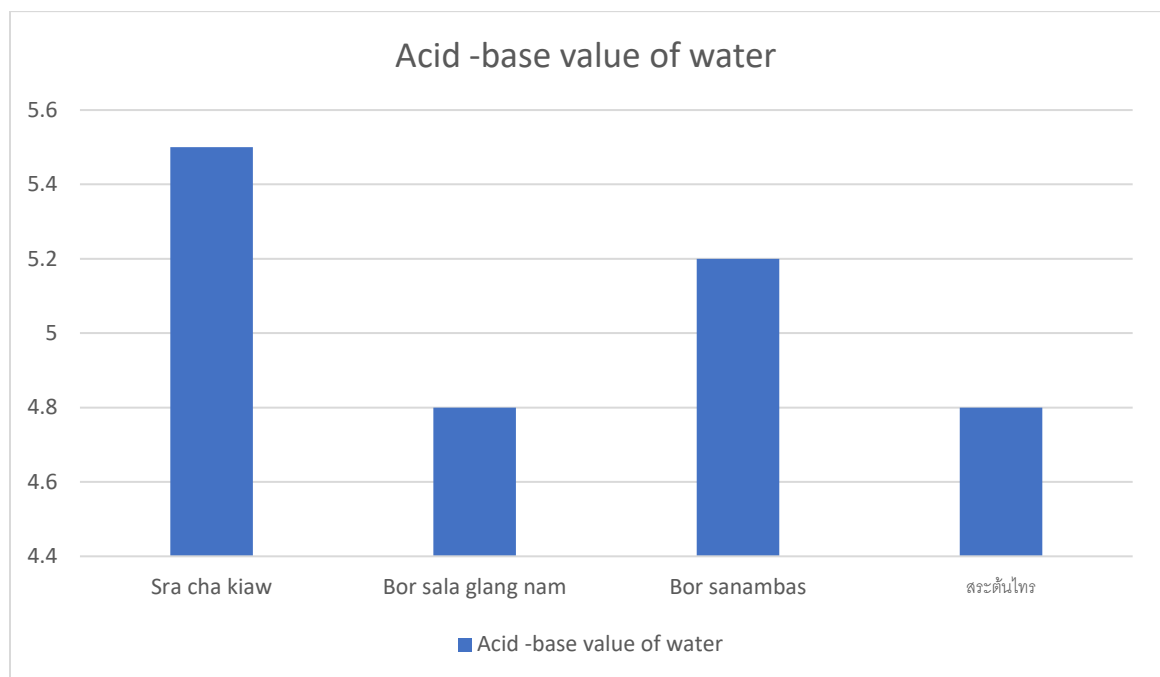


Table 3 shows the transparency of the water of 4 ponds in Wichianmatu School.

The amount of water from the depth of the rope that measures transparency				
At the time	Sra cha kiaw	Bor sala glang nam	Bor sanambas	Bor tonsai
1	108.2 cm	102.3 cm	102.2 cm	103 cm
2	107 cm	101 cm	101 cm	104.5 cm
3	107.3 cm	103.5 cm	100.4 cm	103.8 cm
average	107.5 cm	102.3 cm	102.3 cm	103.8 cm

From Table 3, the transparency of the water found that the transparency of the water of the Sra cha kiaw is an average of 107.5 cm. The transparency of the water of the Bor sala glang nam has an average of 102.3 cm. The transparency of the water of the Bor sanambas is valuable. Average 102.3 cm. And the transparency of the water of the Bor tonsai is an average of 103.8 cm.

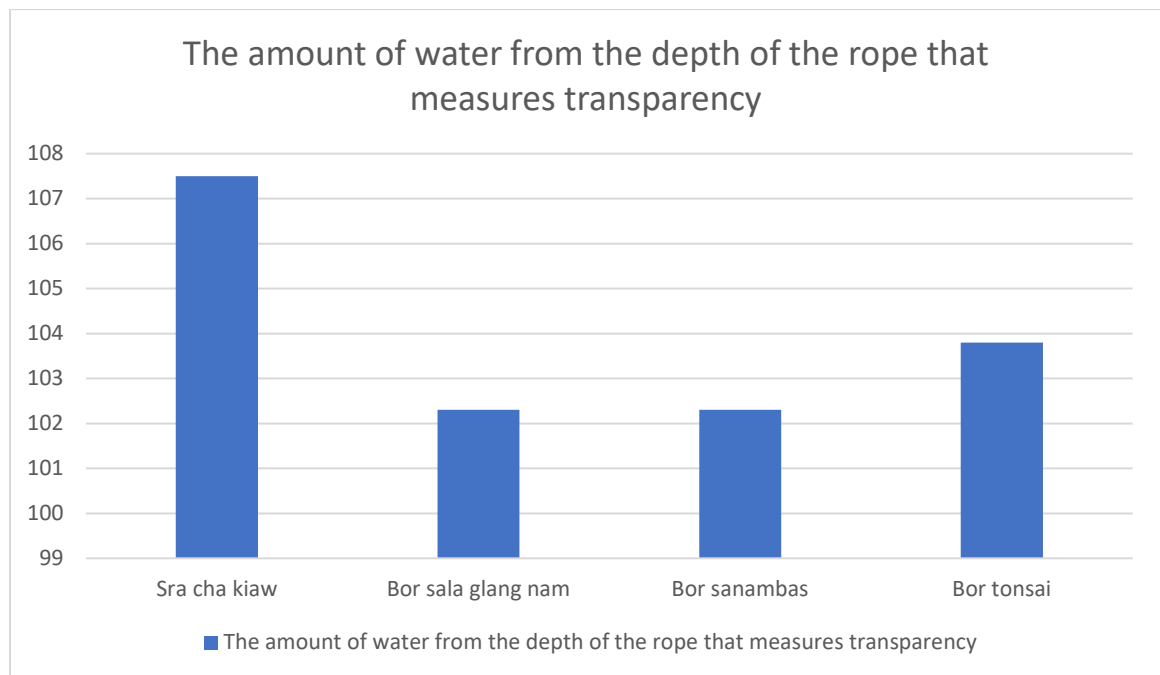
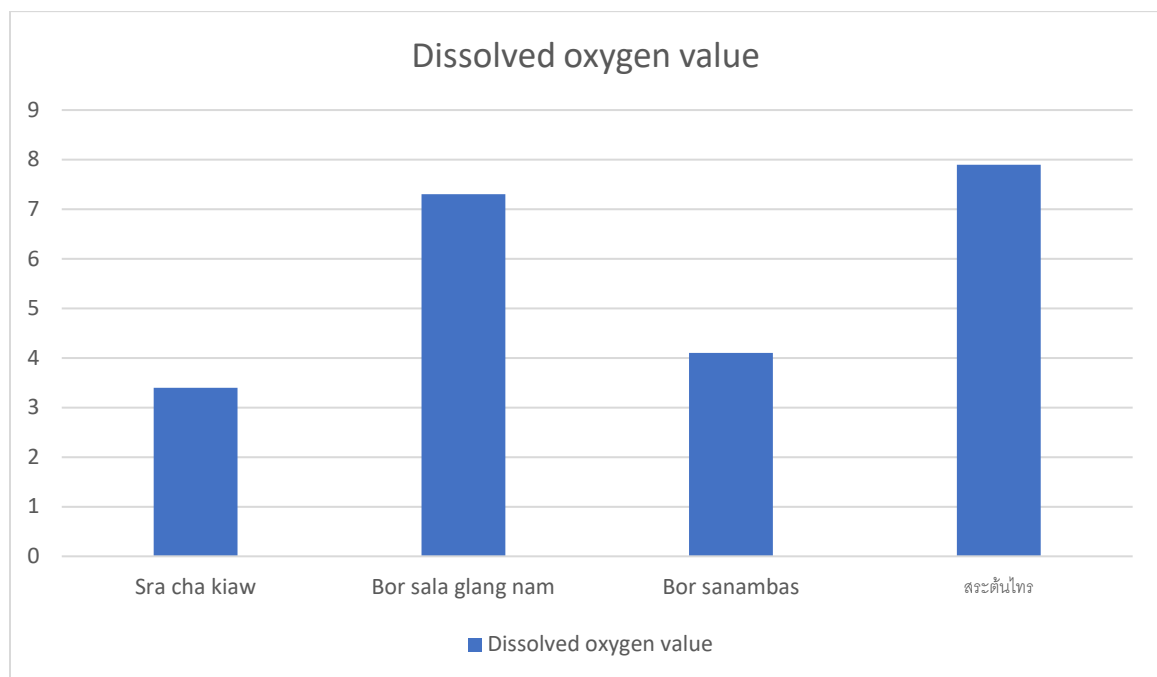


Table 4 shows the water -soluble oxygen in the pool, 4 sources in Wichianmatu School.

Dissolved oxygen value				
At the time	Sra cha kiaw	Bor sala glang nam	Bor sanambas	Bor tonsai
1	3.5	7.5	4.0	8.0
2	3.3	7.1	4.2	7.8
3	3.4	7.3	3.9	7.9
average	3.4	7.3	4.1	7.9

From Table 4, the oxygen value of the water found that the water -soluble oxygen value of the Sra cha kiaw has an average of 3.4. The water -soluble oxygen value of the water Bor sala glang nam is an average of 7.3. The soluble oxygen of the Bor sanambas court has an average of 4.1 and the dissolved oxygen of the Bor tonsai is an average of 7.9.





## Discussion

Comparative study of water quality in 4 Sura ponds around Wichianmatu School. The water quality indicators include temperature, pH value, water transparency, and dissolved oxygen. The average temperature of the Sra cha kiaw was 28.6°C, Bor sala glang nam was 26.3°C, the Bor sanambas was 27°C, and the Bor tonsai was 26.3°C. The Sra cha kiaw was not covered with trees. The average pH of the Sra cha kiaw was 5.5, the Bor sala glang nam pH was 4.8, the Bor sanambas averaged 5.2, and the Bor tonsai pH was 5.2. Average 4.8 from the study of natural water, most of which have a relatively high pH, neutral in the range of 6.5-8.5 (Division of Groundwater Analysis, 2018). The average water transparency of the Sra cha kiaw was 107.5 cm, the average water transparency of the Bor sala glang nam 102.3 cm, the average water transparency of the Bor sanambas was 102.3 cm, and the average water transparency of the Bor tonsai was 103.8 cm. should be in the range of 50-90 cm (Faculty of Environmental Management, Prince of Songkla University, 2014). Water transparency is not suitable. The average dissolved oxygen in the Sra cha kiaw was 3.4, the average for the Bor sala glang nam was 7.3, the Bor sanambas was 4.1, and the Bor tonsai was 4.1. Average 7.9. Good standard dissolved oxygen values are in the range of 5-8 mg/l and below 3 mg/l. Neonics Co., Ltd.) From the above data, it can be seen more than in Sra cha kiaw water. not as close to the standard value as possible

## **Summary of experimental results and recommendations**

### **Summary of experimental results**

From a comparative study of water quality in 4 pools around Wichienmatu School, it was found that the dissolved oxygen values were clearly different. And the temperature, acidity - alkalinity, transparency of water are different. just a little together

### **Recommendations**

1. The resolution of the comparative study should be increased. Compared to the quality of this water
2. Should increase the variable to control the advantage. Compare water quality in a clear and precise way.
3. Water samples should be collected to compare water quality.