



Comparison of water quality in *Dendrocalamus* and *Bambusa burmanica*  
in dry and rainy seasons

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## Abstract

The experiment of Comparison of water quality in *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons aimed to study the comparison of water quality in *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons. The *Dendrocalamus* was studied in the area of Village No.8, Thung Khai Sub-district, Yan Ta Khao District, Trang Province, Thailand and the *Bambusa burmanica* was studied in the area of Village No.5, Kuan Pring Sub-district, Mueang Trang District, Trang Province, Thailand. By measuring the acidity-base(pH) and Dissolved oxygen discovered the water of water in the *Dendrocalamus* in the dry and rainy seasons and *Bambusa burmanica* in the dry and rainy seasons It was discovered that the pH and Dissolved oxygen values of both bamboo species differed in each season. The *Dendrocalamus* in the area of Village No.8, Thung Khai Sub-district, Yan Ta Khao District, Trang Province,Thailand in the dry season, the pH is neutral and average Dissolved oxygen of 5.2 mg/L. The *Bambusa burmanica* in the area of Village No.5, Khuan Pring Sub-district, Mueang Trang District, Trang Province,Thailand in the dry season, the pH is acidic and average Dissolved oxygen of 6.5 mg/L. The *Dendrocalamus* in the area of Village No.8, Thung Khai Sub-district, Yan Ta Khao District, Trang Province,Thailand in the rainy season, the pH is acidic and average Dissolved oxygen of 7.8 mg/L. The *Bambusa burmanica* in the area of Village No.5, Khuan Pring Sub-district, Mueang Trang District, Trang Province,Thailand in the rainy season, the pH is acidic and average Dissolved oxygen of 8 mg/L.

Keywords: comparison, quality, acidity-base(pH), Dissolved oxygen

## Introduction

The Bamboo is useful in every part, from the leaves to the roots. Bamboo leaves are used as packaging for wrapping, food, and basketry. Water from bamboo plants is naturally filtered water, giving it a clear, pure appearance that is no different from normal drinking water. Therefore can be used to drink instead of water in times of water shortage It is believed that bamboo water can be used to drink. It is also useful in the treatment of diseases such as helping to drive toxins in the body. Especially dissolving gallstones helping cure malaria Helps to resolve irregular menstruation and can also be used to cleanse toxins both in the body and in vegetables and fruits that are commonly consumed as well, such as washing faces, washing vegetables, washing ink, pens or chemicals pens because bamboo water can wash substances good poison because bamboo water is acidic The quality of drinking water can be examined by its physical characteristics. chemistry and biology indicators indicating physical water quality namely color, odor, and acidity-base(pH), including measuring bacteria which compares bamboo water with water quality standards for consumption Nowadays, water from bamboo is used for consumption and is becoming more well-known because bamboo can be found in every area. And water production from bamboo can be done with all bamboo species for the above reasons, Therefore interested in studying and comparing the quality of bamboo water by analyzing the physical quality of bamboo water Chemical and biological samples of bamboo water were obtained from 2 types of bamboo, *Dendrocalamus* and *Bambusa burmanica*, as well as to compare the quality of 2 species of bamboo water with the standard values for groundwater quality for consumption.

## **Objectives**

- 1.) Comparison of water quality in Dendrocalamus and Bambusa burmanica in the dry season.
- 2.) Comparison of water quality in Dendrocalamus and Bambusa burmanica in the rainy season.

## **Research question**

- 1.) Is there a difference between the water in the Dendrocalamus and the Bambusa burmanica?
- 2.) Is there a difference between the water in the Dendrocalamus and Bambusa burmanica in different seasons?

## **Research Hypothesis**

The quality of water in Dendrocalamus and Bambusa burmanica varies from season to season.

## Research Methods

Comparison of water quality in *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons.

### Equipment

1. *Dendrocalamus*
2. *Bambusa burmanica*
3. Beaker
4. Universal indicator paper
5. Dissolved Oxygen
6. Bottle
7. Plastic rope
8. Rubber tube
9. Cordless drill
10. Alcohol
11. Cotton

### GLOBE protocol

- Methods for measuring dissolved oxygen in the water.
- Methods for measuring the acidity-base of water.
- Methodology for measuring the transparency of water.

## Experimental Methods

**Experiment 1:** Examination of water quality of both bamboo species in the dry season.

- 1.) Use a cordless drill to drill into the *Dendrocalamus* stems to collect water samples. Wipe the hole with a cotton dipped in alcohol and attach a rubber tube to the bottle and then tie to the bottle with a plastic rope.
- 2.) Use a cordless drill to drill into the *Bambusa burmanica* stems to collect water samples. Wipe the hole with a cotton dipped in alcohol and attach a rubber tube to the bottle and then tie to the bottle with a plastic rope.
- 3.) Observe the physical characteristics of cultured the *Dendrocalamus* and *Bambusa burmanica*, color and odour .
- 4.) Take note of the physical characteristics of the *Dendrocalamus* and *Bambusa burmanica*.
- 5.) Take the water from both species of bamboo to find the pH of the bamboo water obtained using universal indicator paper.
- 6.) Take note of the acidity-base(pH) of both species of bamboo water.
- 7.) Measurement of dissolved oxygen in the water of both bamboo species. Using the Dissolved Oxygen check.
- 8.) Take note of the dissolved oxygen in both bamboo species.

**Experiment 2:** Examination of water quality of both bamboo species in the rainy season.

- 1.) Use a cordless drill to drill into the *Dendrocalamus* stems to collect water samples. Wipe the hole with a cotton dipped in alcohol and attach a rubber tube to the bottle and then tie to the bottle with a plastic rope.
- 2.) Use a cordless drill to drill into the *Bambusa burmanica* stems to collect water samples. Wipe the hole with a cotton dipped in alcohol and attach a rubber tube to the bottle and then tie to the bottle with a plastic rope.
- 3.) Observe the physical characteristics of cultured the *Dendrocalamus* and *Bambusa burmanica*, color and odour.

- 4.) Take note of the physical characteristics of the *Dendrocalamus* and *Bambusa burmanica*.
- 5.) Take the water from both species of bamboo to find the pH of the bamboo water obtained using universal indicator paper.
- 6.) Take note of the acidity-base(pH) of both species of bamboo water.
- 7.) Measurement of dissolved oxygen in the water of both bamboo species. Using the Dissolved Oxygen check.
- 8.) Take note of the dissolved oxygen in both bamboo species.

Infer the results of the experiments on watering *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons in tabular format.

## Results

- Table 1: Shows the physical characteristics of water in the bamboo stems in dry season.

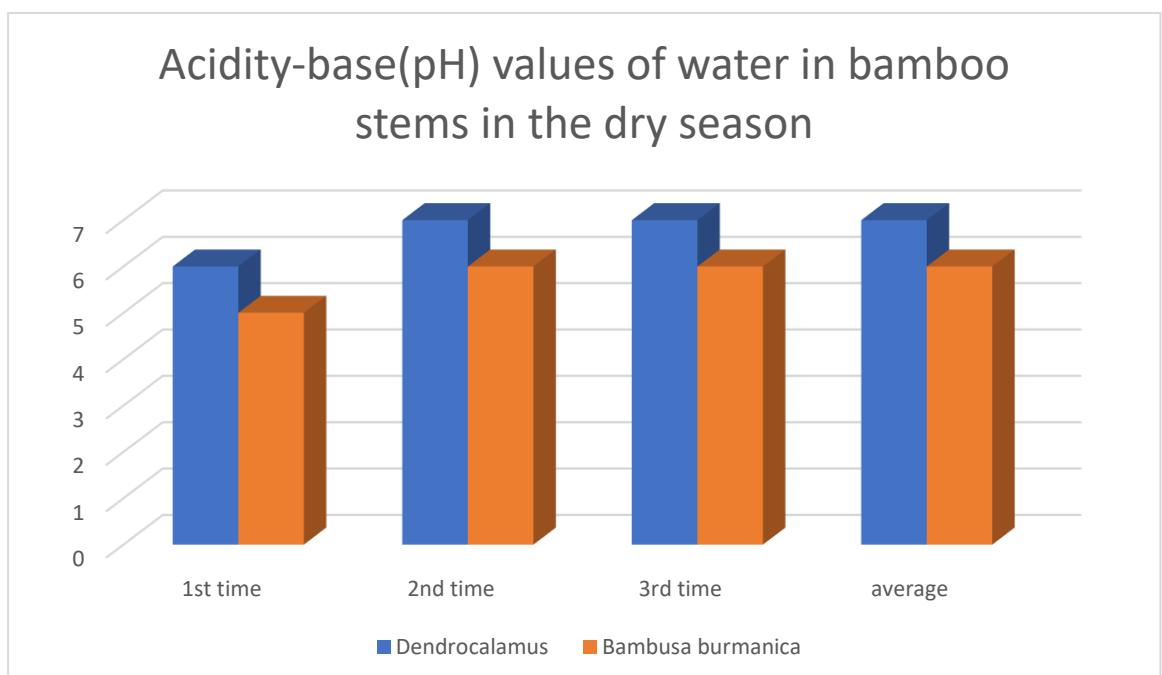
Physical characteristics of water in the bamboo stems in dry season		
bamboo species	Dendrocalamus	Bambusa burmanica
color	colorless	colorless
odour	odorless	odorless

Both bamboo species' physical characteristics in the dry season are the same.

- Table 2: Shows the acidity-base(pH) values of water in bamboo stems in the dry season.

bamboo species	Dendrocalamus	Bambusa burmanica
1st time	6	5
2nd time	7	6
3rd time	7	6
average	7	6

The Acidity-base(pH) value of Dendrocalamus in the dry season was higher than that of Bambusa burmanica in the dry season.

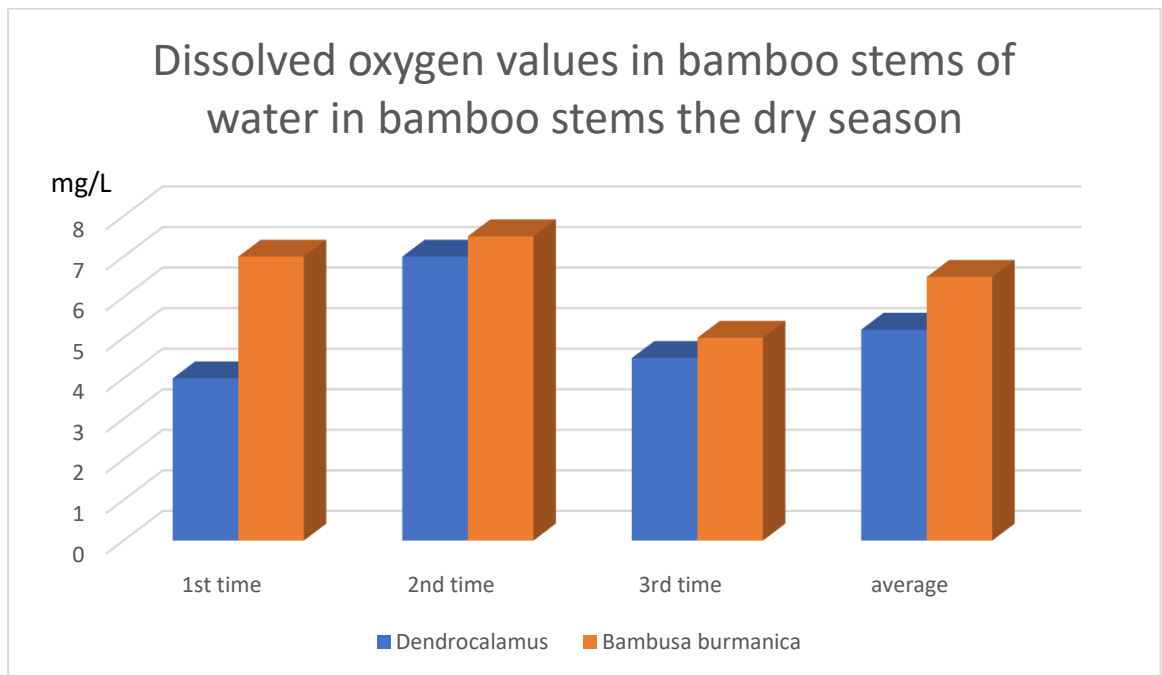




- Table 3: Shows the dissolved oxygen values in bamboo stems of water in bamboo stems the dry season.

Dissolved oxygen values in bamboo stems of water in bamboo stems the dry season		
bamboo species	Dendrocalamus	Bambusa burmanica
1st time	4.0 mg/L	7.0 mg/L
2nd time	7.0 mg/L	7.5 mg/L
3rd time	4.5 mg/L	5.0 mg/L
average	5.2 mg/L	6.5 mg/L

The dissolved oxygen value in the water in Bambusa burmanica stems in the dry season was higher than that of Dendrocalamus stems in the dry season.



- Table 4: Shows the physical characteristics of water in the bamboo stems in rainy season.

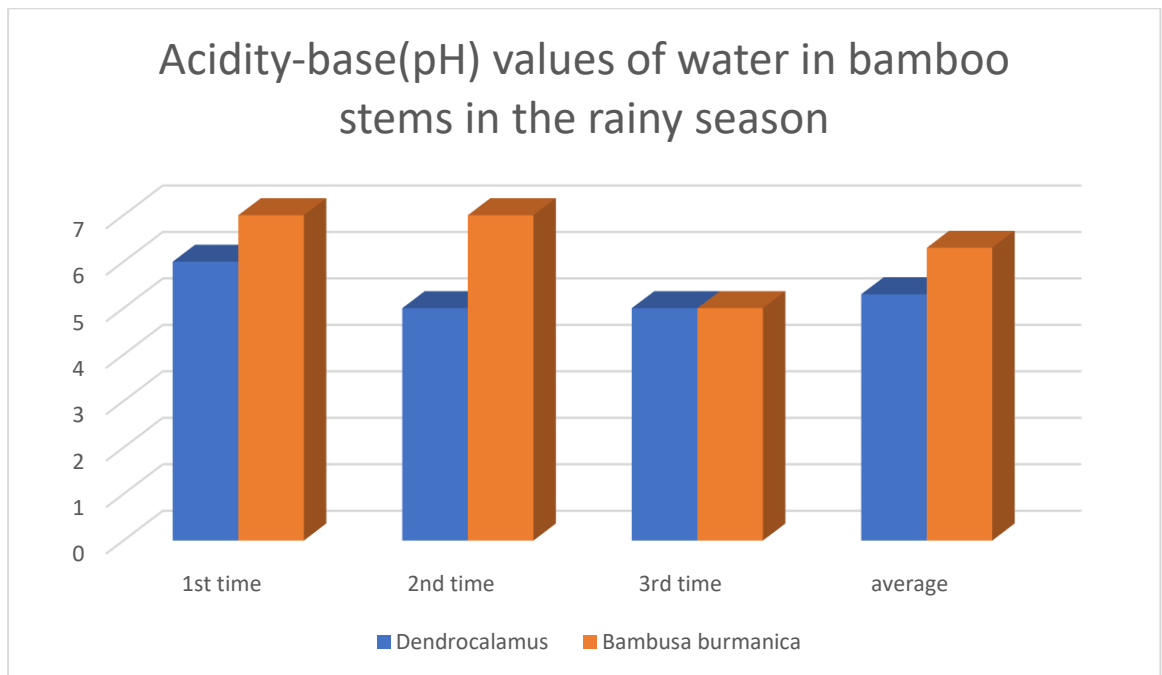
Physical characteristics of water in the bamboo stems in rainy season.		
bamboo species	Dendrocalamus	Bambusa burmanica
color	colorless	colorless
odour	odorless	odorless

Both bamboo species' physical characteristics in the rainy season are the same.

- Table 5: Shows the acidity-base(pH) values of water in bamboo stems in the rainy season.

Acidity-base(pH) values of water in bamboo stems in the rainy season		
bamboo species	Dendrocalamus	Bambusa burmanica
1st time	6	7
2nd time	5	7
3rd time	5	5
average	5.3	6.3

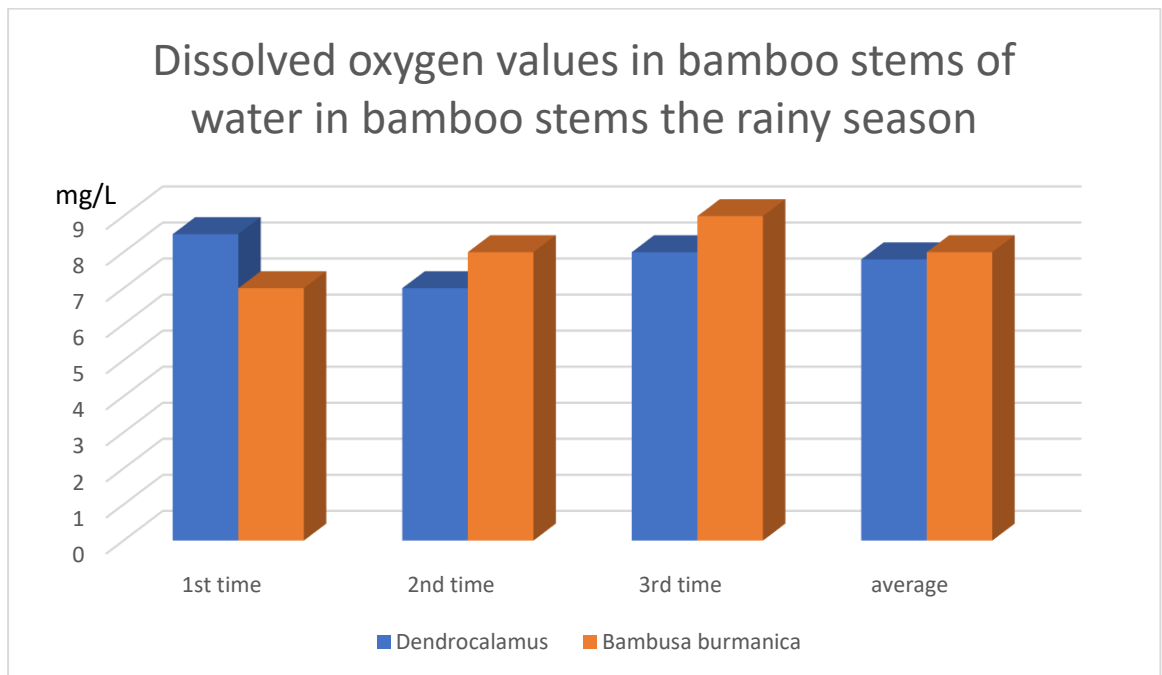
The Acidity-base(pH) value of Bambusa burmanica in the rainy season was higher than that of Dendrocalamus in the rainy season.



- Table 6: Shows the dissolved oxygen values in bamboo stems of water in bamboo stems the rainy season

Dissolved oxygen values in bamboo stems of water in bamboo stems the rainy season		
bamboo species	Dendrocalamus	Bambusa burmanica
1st time	8.5 mg/L	7.0 mg/L
2nd time	7.0 mg/L	8.0 mg/L
3rd time	8.0 mg/L	9.0 mg/L
average	7.8 mg/L	8.0 mg/L

The dissolved oxygen value in the water in Bambusa burmanica stems in the rainy season was higher than that of Dendrocalamus stems in the rainy season.



## Discussion

The research on the comparison of water quality in *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons. The pH and oxygen values of the two bamboo species vary in different seasons. The *Dendrocalamus* in the area of Village No.8, Thung Khai Sub-district, Yan Ta Khao District, Trang Province, Thailand in the dry season, acidity-base(pH) of 7 is neutral and average Dissolved oxygen of 5.2 mg/L. The *Bambusa burmanica* in the area of Village No.5, Khuan Pring Sub-district, Mueang Trang District, Trang Province, Thailand in the dry season, acidity-base(pH) of 6 is acidic and average Dissolved oxygen of 6.5 mg/L. It was concluded that the quality of water in both species of bamboo in the dry season was the highest. Suitable for consumption is *Bambusa burmanica* in the dry season. Next, The *Dendrocalamus* in the area of Village No.8, Thung Khai Sub-district, Yan Ta Khao District, Trang Province, Thailand in the rainy season, acidity-base(pH) of 5.3 is acidic and average Dissolved oxygen of 7.8 mg/L. The *Bambusa burmanica* in the area of Village No.5, Khuan Pring Sub-district, Mueang Trang District, Trang Province, Thailand in the rainy season, acidity-base(pH) of 6.3 is acidic and average Dissolved oxygen of 8 mg/L. It was concluded that the quality of water in both species of bamboo in the rainy season was the highest. Suitable for consumption is *Bambusa burmanica* in the rainy season. From the above experiments, moisture factors that affect transpiration were used. It was found the *Bambusa burmanica* in both seasons had more water transpiration than *Dendrocalamus* in both seasons. Because the area where the *Bambusa burmanica* is located has more moisture than the area where the *Dendrocalamus* is. Another reason why the quality of water in *Bambusa burmanica* is higher than that of *Dendrocalamus*.

## Conclusion

The comparison of water quality in *Dendrocalamus* and *Bambusa burmanica* in dry and rainy seasons was studied. It was found that the acidity-base(pH) of water in *Bambusa burmanica* is equal to *Dendrocalamus*. The Dissolved oxygen in the water of the *Bambusa burmanica* is higher than that of the *Dendrocalamus*. And when compared to different seasons It was found that the acidity-base(pH) in the water of the *Dendrocalamus* in the dry season is higher than that of the *Dendrocalamus* in the rainy season. The Dissolved oxygen in the water of the *Dendrocalamus* in the rainy season is higher than that of the *Dendrocalamus* in the dry season. And the acidity-base(pH) in the water of the *Bambusa burmanica* in the rainy season is higher than that of the *Bambusa burmanica* in the dry season. The Dissolved oxygen in the water of the *Bambusa burmanica* in the rainy season is higher than that of the *Bambusa burmanica* in the dry season.

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