



# Study of climate and soil quality affecting biochemical composition of Trang pepper

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# Introduction

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# Research questions

1. Do weather conditions and soil quality affect the biochemical composition of Trang pepper?
2. Are the biochemical composition of Trang pepper in Palian District and Nayong District different?





# Objectives

1.To study the weather and soil quality that affect the biochemical composition of Trang pepper in Palian and Nayong districts.

2.To compare the biochemical composition of Trang pepper in Palian and Nayong districts.





# METHODOLOGY

Study site

1

2

Weather data collecting

3

Determination of the soil  
sampling point

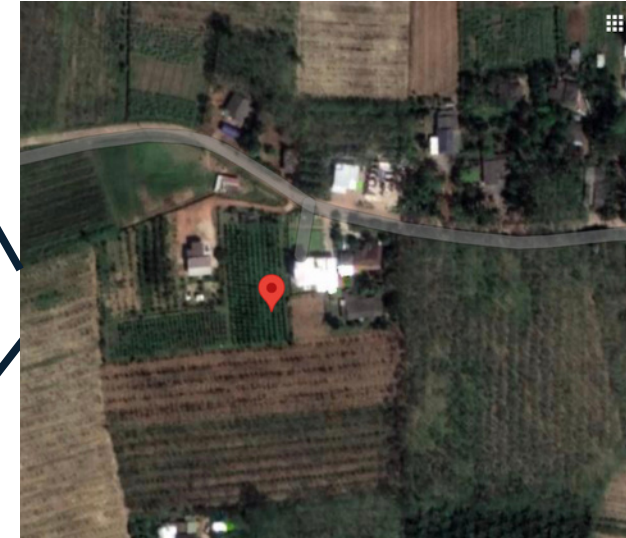
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Soil quality sampling

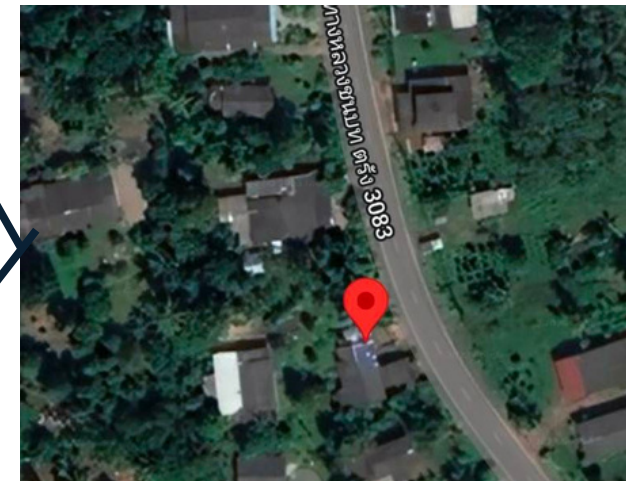
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Analysis of piperine content

# Study site



**Palian District**



**Nayong District**

**Specify the study site: The study was conducted at the pepper garden, Palian District. and pepper gardens, Nayong District, Trang Province**



# Methodology

## Weather data collecting

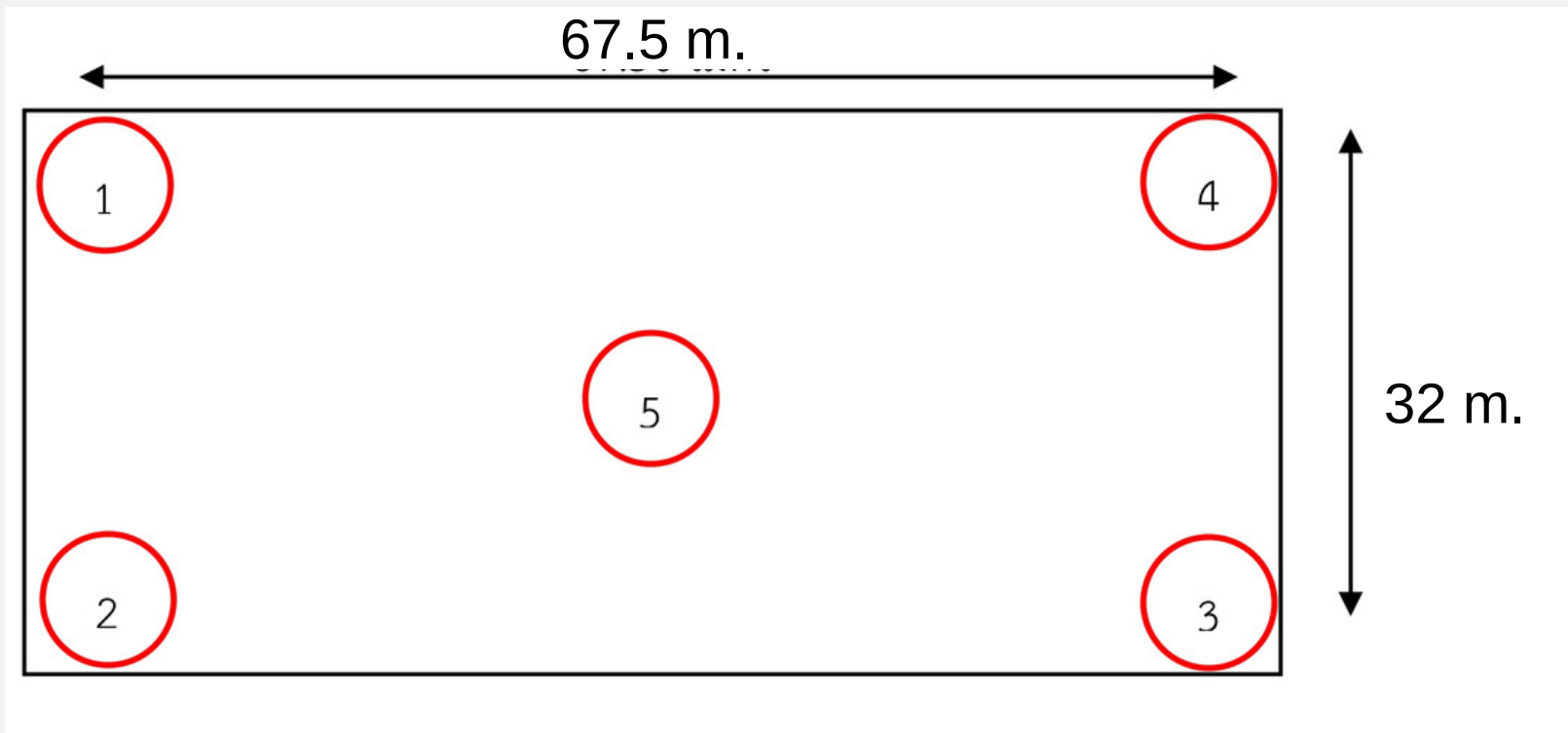


Collect weather information, including air temperature, relative humidity and rainfall

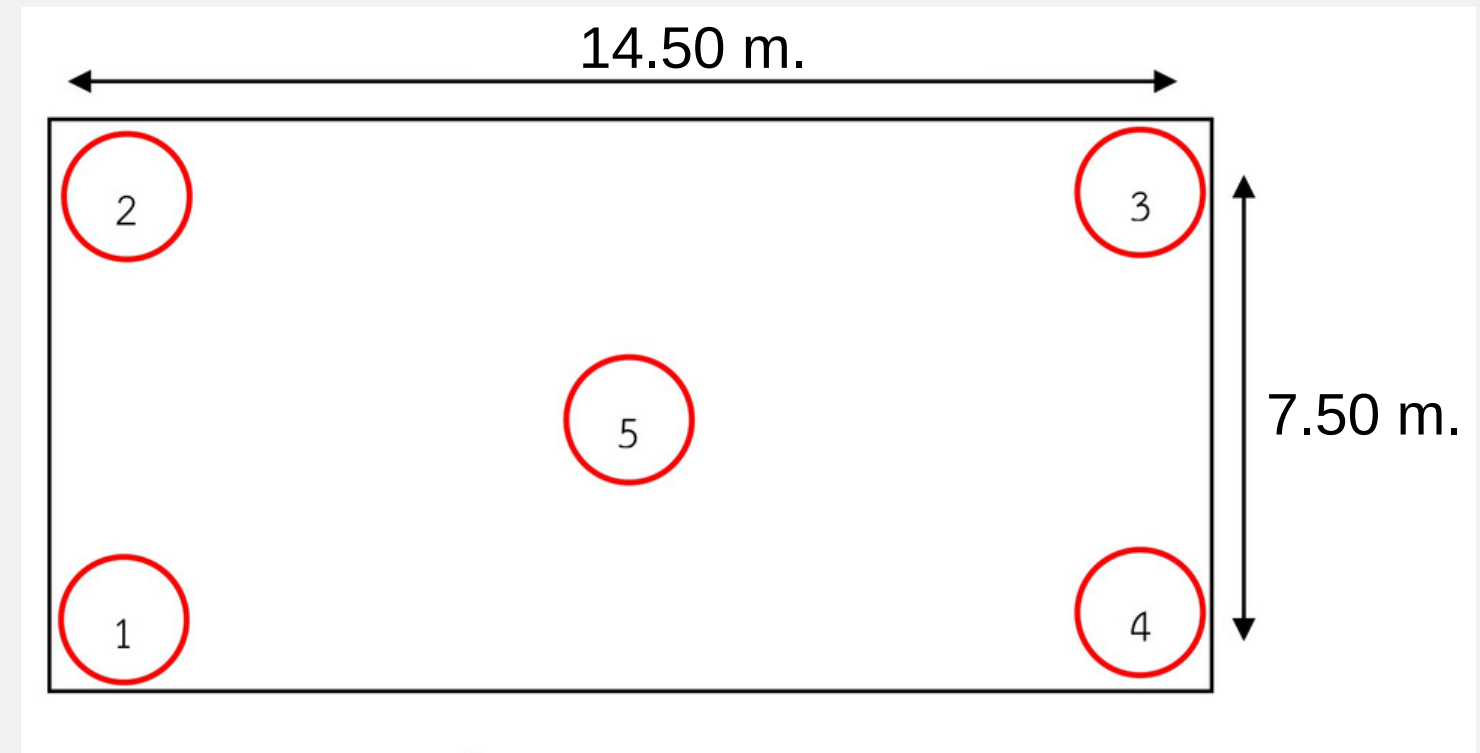


# Methodology

## Determination of the soil sampling point



Palian District



Nayong District

The soil sample collection area is determined by dividing the soil sample into 5 points.



# Methodology

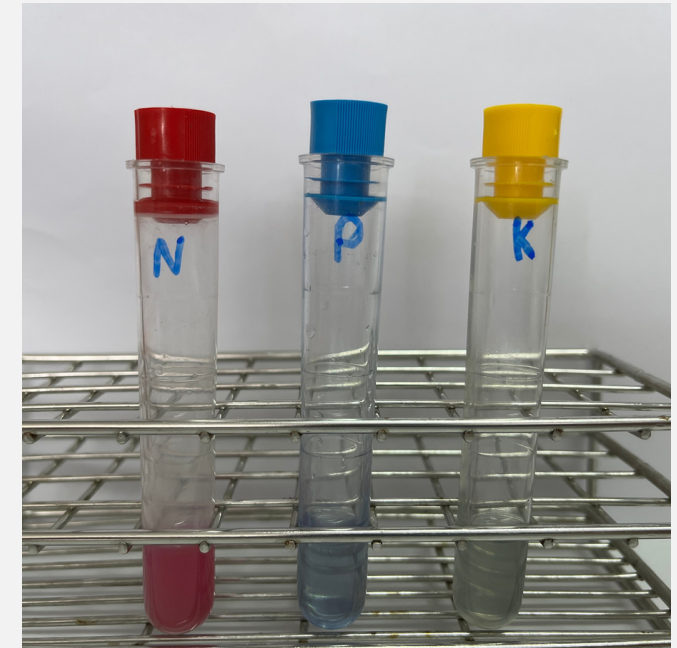
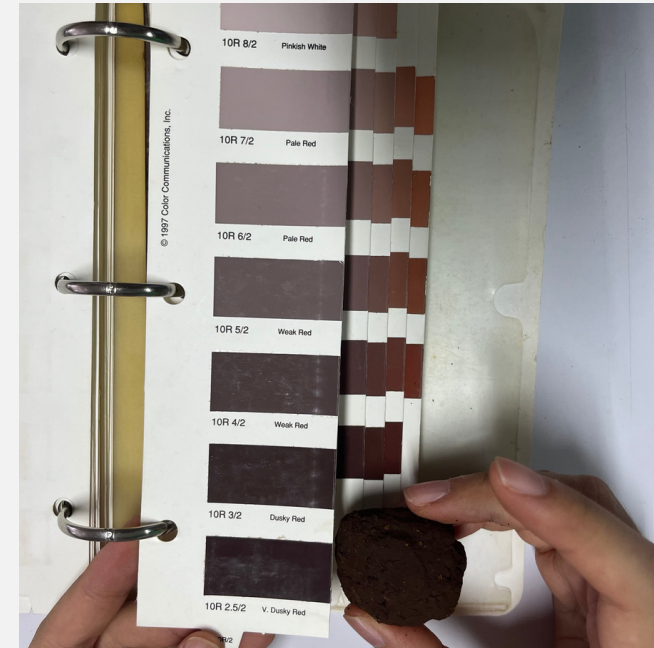
## Soil quality sampling

1



Measure soil surface and subsurface temperature, soil texture and collect soil samples for analysis.

2



Soil samples were analyzed for pH, moisture, organic matter and nutrient levels.

3

Send data to Globe Data Entry Pedosphere



# Methodology

## Analysis of piperine content

Prepare pepper samples for analysis of piperine content.

**Green seed pepper**

**Separate the seed from the stalk by hand.**

**Wash, separating the redundant seeds.**

**Put into a hot air oven at 50° c for 24 hours.**

**Store in a brown bottle covered with parafilm.**



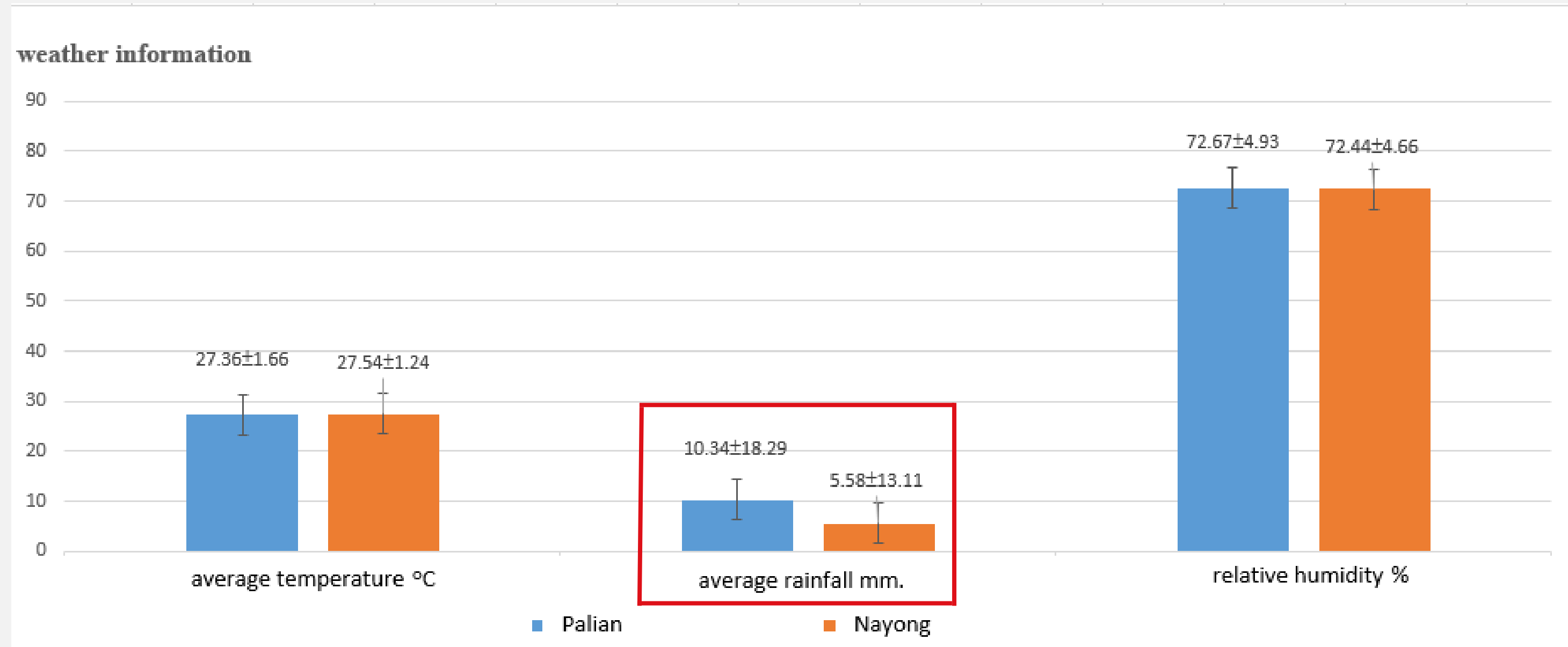




# Results

# Study results

## Weather data collection



**Chart 1** show difference of weather data between two places

# Study results

## Soil characteristics sampling

Soil characteristics				Soil nutrients		
No.	Color code	Color	Type soil	N	P	K
Palian	10YR 4/2	Dk. Gy. Brown	sandy loam	low	low	high
Nayong	2.5YR 4/6	Red	silty clay loam	high	high	trace

**Table 1** show soil characteristics



# Study results

## Soil quality sampling

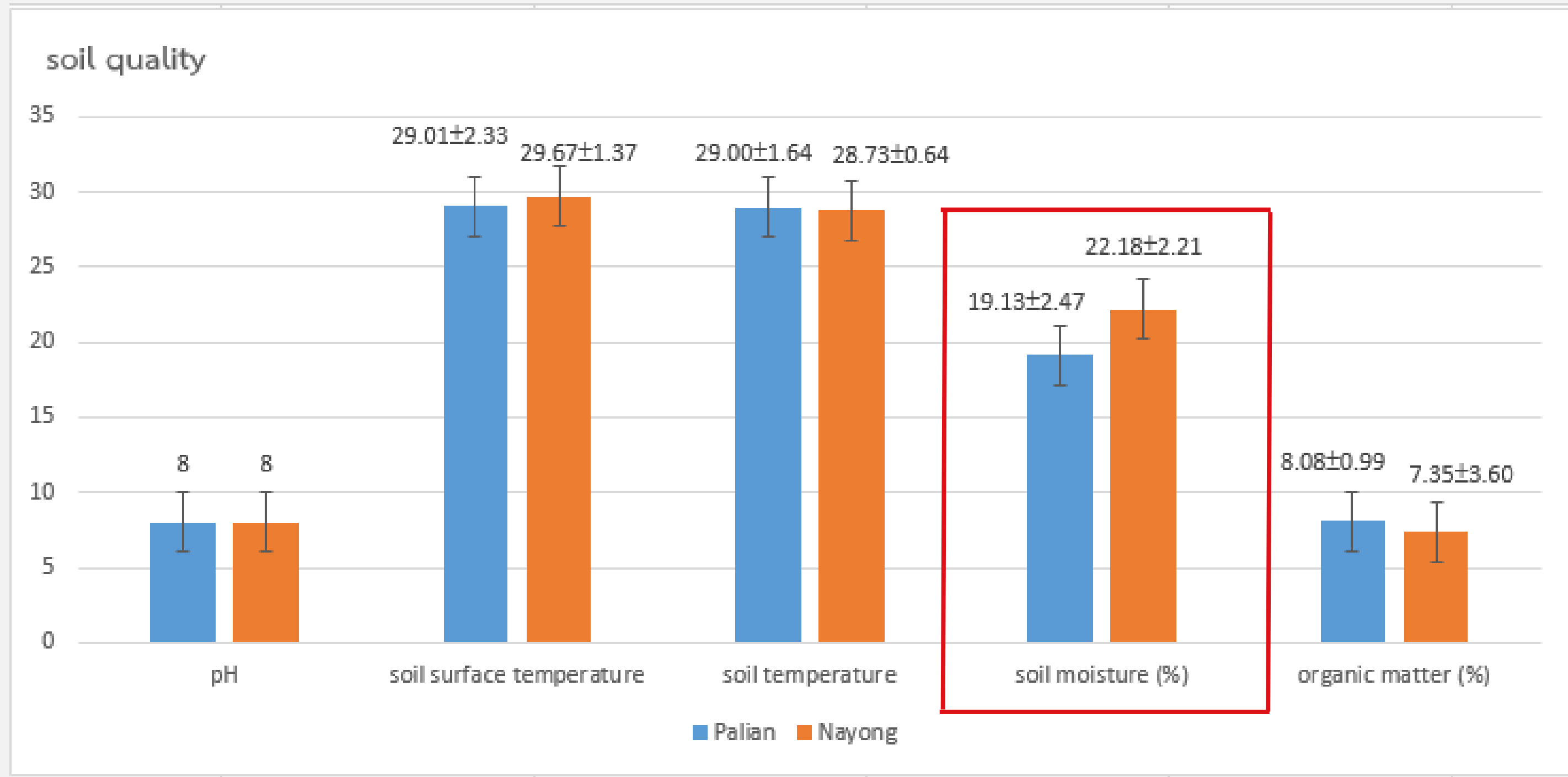
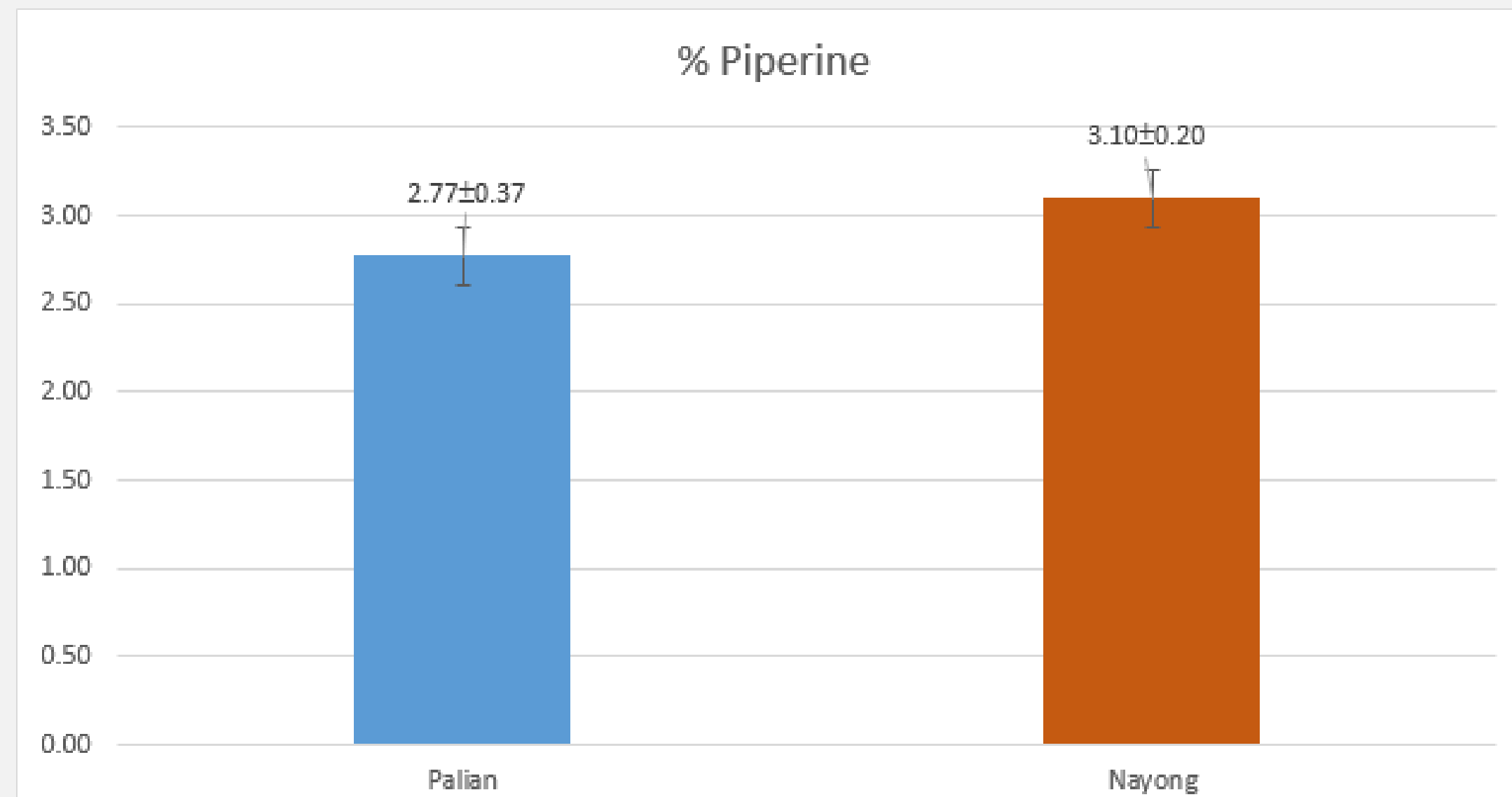


Chart 2 show soil quality

# Study results

## Analysis of piperine content

From the study, it was found that pepper from Nayong District's pepper plantation had higher content of piperine than that of Palian's pepper.



**Chart 3** show % of piperine

# Conclusions

- Weather conditions and soil quality affect the biochemical composition of Trang pepper. Nayong District had higher soil moisture and nutrient content (NPK) than Palian District, resulting in the percentage of piperrine in Trang pepper of Nayong District was higher than Palian District.
- Chemical composition of Trang pepper in Palian and Nayong districts There is a difference. Palian District, the percentage of piperrine was  $2.77 \pm 0.37$  and Nayong District, the percentage of piperine was  $3.10 \pm 0.20$ .



# Benefits

1. Know the weather conditions and soil quality that are suitable for growing pepper in order to obtain the desired pepper quality.
2. It is to promote Trang pepper for general people to know more and conserve local plants of Trang province.
3. Disseminate research information to the community to maintain quality and increase value to Trang pepper.





# Impact to community





# Acknowledgements



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**Thank you**

