The relationship between temperature and rainfall on the Ceiba

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- Background Research
- After the Mid-Autumn Festival, the roads are full of large and bright flowers, and large pink flowers hang all over the tree, which look like cherry blossoms.When observing it, we found that the trunk was jagged. After investigating, it is the Ceiba, which is a tropical plant. Since the Ceiba is a tropical plant, the flowering season varies from place to place. Therefore, we wanted to know the factors that cause the leaves of Ceiba to fall and bloom in Kinmen.
- Summary
- We picked out two factors including temperature and rainfall. Then, we explored their associations with leaf blooming and withering, in order to match our observation photos from September 27, 2021 to February 16, 2022.
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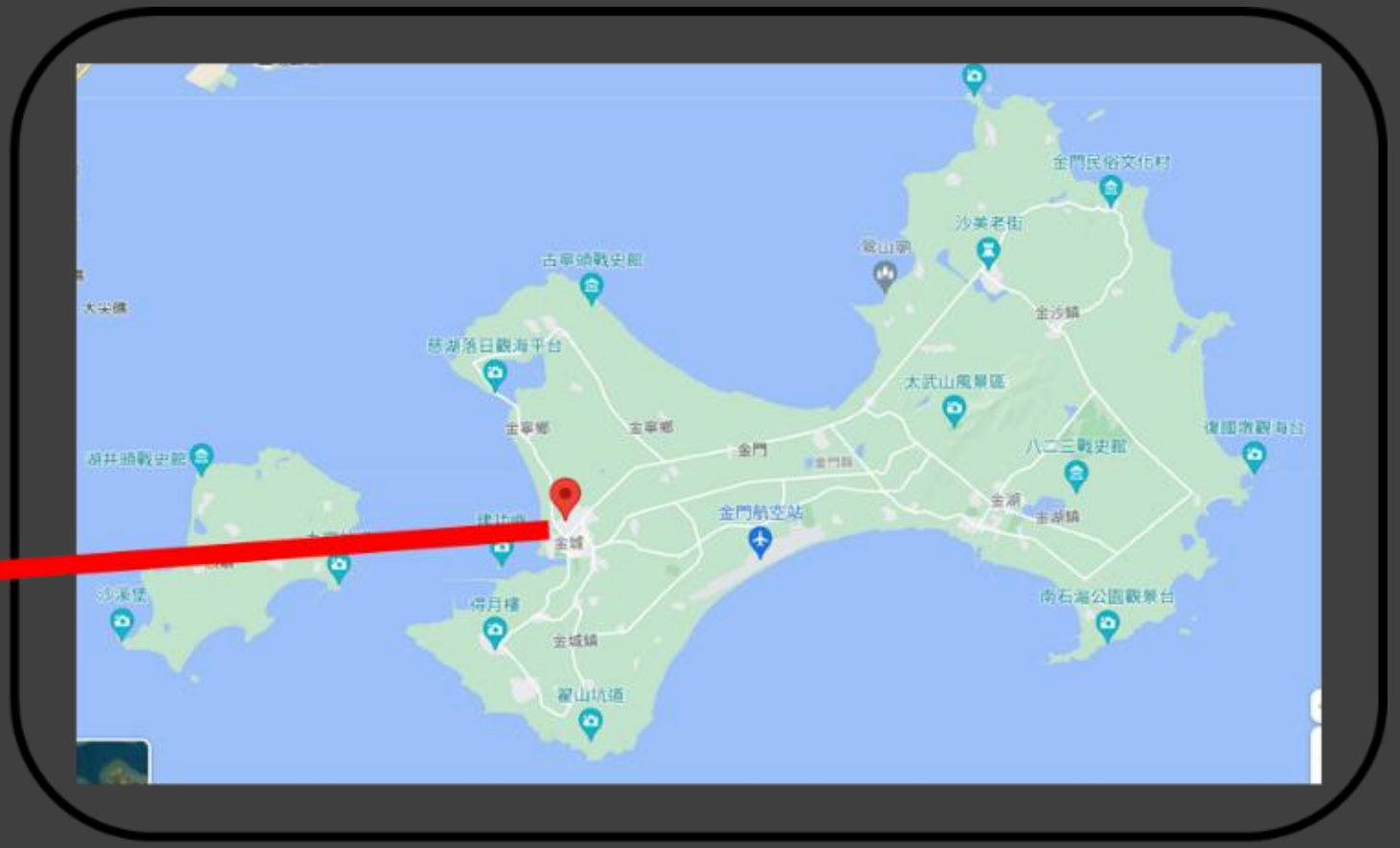
- Research motivation
- We found that there are other factors that change tree growth as the seasons change.

Thus, we explored factors in different seasons that will cause more obvious changes in the growth of plants.

- Research purposes
  - The effect of temperature changes on Ceiba.
  - The effect of rainfall changes on Ceiba.

- Experimental subject
- ***Ceiba speciose***
- There are thorns on the trunk and main branches of the Ceiba to defend against animal predators. The leaves are small and the shape of trees are delicate. It is a tropical plant that is suitable for all-day sunlight and dry-resistant. The period of Ceiba blossom is from autumn to winter or summer to autumn. The further north Taiwan goes, the sooner it blooms, while the period of blossom in Kinmen is from September to November. If it rains a lot, it is less likely to bloom.

					
2021/09/27	2021/10/27	2021/11/15	2021/12/20	2022/1/12	2022/2/16



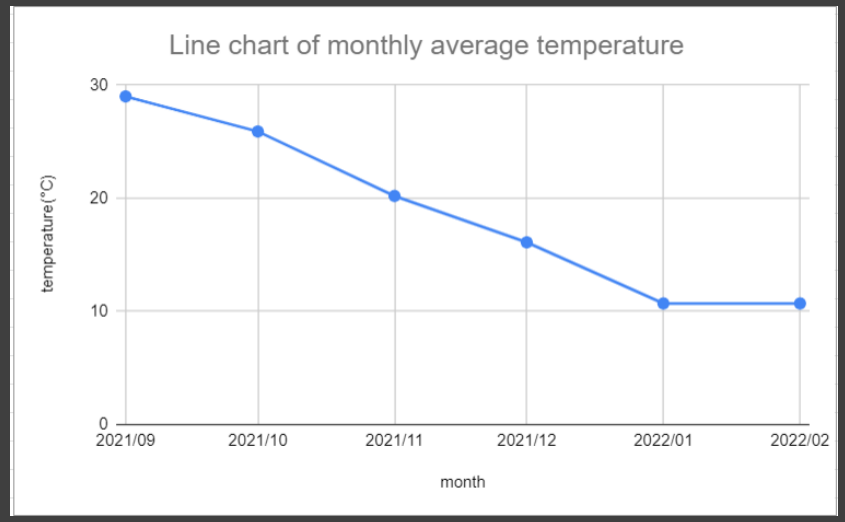
Observe location

- research method
- Getting information of temperature and rainfall from CODIS, then put it into tabulation.
- Analyzing the picture and date of tabulation, and be sure whether the characteristics of the plant are correct.
- Discussing the consequences and finds from plants.

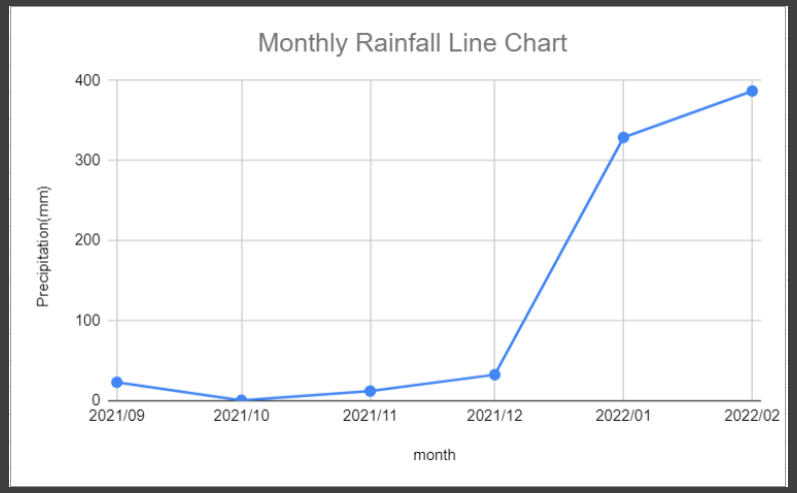
Research result

The effect of temperature changes on Ceiba

- As the temperature drops, the flowers and leaves gradually fall.
- In winter, except for fruit, the branches are all bare.



- The whole flowering period falls from September to November when there is less rainfall.
- The leaves fall completely between September and November.



- Discussion
  - Temperature
  - Ceiba is a tropical plant, so the flowers and leaves wither as the temperature drops, and that can slow down the metabolism of plants and help the plant enter a dormant state.
  - Rainfall
  - According to the quality of Ceiba, when it is about to enter the flowering period, it is easy to cause a poor flowering effect in rain. As a result, the leaves will fall incompletely, resulting in the coexistence effect of flowers and leaves.

- Finding
  - Because the Ceiba is a tropical plant, as the temperature drops, the plant will enter the hibernation state, and because our shooting time is from autumn to winter, the appearance of entering the light from the leafy state is in line with the characteristics of the plant itself.
  - There is not much rainfall this autumn, which is suitable for the flowering of Ceiba, so there are many flowers, and because of the low rainfall, there is no effect of flower and leaf coexistence due to the incomplete fall of leaves.
  - We found that the fruit can still grow without all the leaves. It can be seen that although the photosynthesis of the leaves is weakened, there will still be other parts to provide the nutrients needed for the growth of the fruit.

- Conclusion
  - From autumn to winter, the flourishing state of leaves into the bare situation, in line with helping the dormant state of plants as tropical plants for self-protection.
  - Less rainfall is beneficial to the flowering period of Ceiba, so the flowers are lush and conducive to leaf falling and leafless coexistence.
  - We speculate that Ceiba, like most tropical plants, have the fundamental function of storing excess nutrients in spring and summer. After winter, they will use the skin to transport the stored nutrients to the required places.

- Reference
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