

Biology field trip

Group 4

Topic of investigation

- * The investigation on the effect of soil salinity on the distribution of mangrove plants.
- * Assume more mangrove plants grow in the environment with higher salinity.

Materials and methods

- * Equipment : refractometer (salinity), Light meter, soil thermometer, digital thermometer, line transect, trowels, thermal anemometer, droppers
- * Method:
 1. set two fixed points for investigation

- * 2. Measure all the controlled variables include air temperature, light intensity, soil temperature, wind speed at these two points>>>To ensure a stable environment
- * 3. measure the salinity of soil by extracting drops of water from soil
- * 4. Count the number of mangrove plants along the transect and record their species
- * 5. Compare the abundance and distribution of plants recorded (Aegiceras corniculatum 桐花樹, Kandelia 秋茄樹, Excoecaria agallocha 海漆)

Results

- * The abundance of *Aegiceras*, which is 10, is the highest in the area with a higher salinity
- * Shows that *Aegiceras* is the dominant species and the plant is more adapted to the higher salinity environment
- * One *Kandelia* and one *Excoecaria* are found along the transect

Results	Salinity (per 100g)	Light intensity (X100Lux 20000)	soil temperatu re	air temperatu re	Wind speed
Site A	0.1g	55	21	24.6	6.4km/hr
Site B	2.2g	44	21	24	5.0km/hr

Abundance	Aegiceras	Kandelia	Excoecaria
SiteA	2	1	1
SiteB	10	0	0

Discussion

- * Low species diversity (3 types only)
- * The abundance of the species shows its adaptation e.g. Salt glands on leaves to the environment (positive relationship)

Improvements

- * Repeat the same experiment twice in different areas with different salinity but keep all controlled variables the same
- * Take the average results e.g. Wind speed to increase accuracy and reliability
- * Choose low tide period to carry out the investigation

Significance

- * To know that which species of plant can be planted in higher salinity
- * To understand more about mangrove plants and natural environment
- * To learn the biological relationship between plants and the physical environment

Conclusion

- * **Aegiceras is the dominant species in Site A(from result),as it is more adapted to higher salinity environment**
- * **Salinity have effects on the distribution of mangrove plants**