“Photosynthesis response of Halophila ovalis under different light gradients (High light and low light)”

Ms. Michelle Glory G Jonik
Dr. Sazlina Md Salleh
Dr. Mahadi Mohammad
Centre for Policy Research and International Studies
Universiti Sains Malaysia

Survival of seagrasses are highly dependent on the light intensity received to undergo photosynthesis especially those inhabiting the turbid waters as they are particularly sensitive to light availability. Whereby, decrease in light caused by turbid water may disrupt the photosynthesis activity and eventually will cause rapid decline in growth and distributions (Ralph *et al.*, 2007). The endemic tropical seagrasses *Halophila ovalis* (R. Brown) meadows in Pulau Gazumbo, Penang (5°21'49.3"N 100°19'34.5"E) seems to be suffering from the impact of coastal development and land reclamation project around Penang Island. Light Waterfront development that was built on an approximately 30 hectares reclaimed land off the eastern coast of Penang Island which is adjacent to the study area (Pulau Gazumbo) has caused concern on the status of seagrass in the islet. This can lead to high sedimentation which would result in turbidity and cause light attenuation during photosynthesis process. Thus, this study aimed to determine the effect of light limitation (turbid water) on the photosynthetic yield and recovery of seagrass through chlorophyll *a* fluorescence by using Pulse Amplitude Modulated Fluorometer (PAM). Seagrass from Pulau Gazumbo was collected and subjected to different light condition, high-light (HL) represent clear water condition and low-light (LL) represent turbid water condition. Findings show that *H. ovalis* sample that subjected to HL condition has higher F_v/F_m, $rETR_{max}$ and E_k compared to LL condition. However, *H. ovalis* treated under HL condition required a longer recovery time (30 minutes) than in LL (15 minutes) to achieve high F_v/F_m value.

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