A COMPARISON BETWEEN CULTURING CORAL FRAGMENTS IN TANKS AND DIRECT TRANSPLANTATION ON A SINGAPORE REEF

TSE-LYNN LOH[1] AND LOKE MING CHOU[2]
[1]Tropical Marine Science Institute, National University of Singapore, 14 Kent Ridge Road, Singapore 119223.
[2]Department of Biological Sciences, National University of Singapore, 14 Science Drive 4, Singapore 117543

Singapore reefs have suffered loss in live coral cover through coastal development and an increase in seawater sediment levels. It is thought that coral fragments transplanted onto artificial reef units can be utilised to enhance the reefs in its Southern islands. This study aimed to investigate whether hard coral fragments from six species respond better to transplantation if cultured for a period of time in aquarium tanks, which precludes high sediment rates, abrasive wave surge action and natural predators, as compared to direct transplantation in the field. However, due to the fine nature of the sediments in the water passing though the tank filtration system, turbidity levels in both aquarium and field were not significantly different. Fragments were monitored for mortality, growth and the development of secondary basal plates for up to 20 weeks. Fragments in the aquarium suffered from high mortality and fragments placed in the field site had significantly lower mortality and more secondary basal plate growth. The hard coral species in this study recovered better from the collection process to stresses in their natural environment than to the stress of transport to the aquarium. From the results of the experiment, it is not necessary to spend extra effort to refine the aquarium system to reduce sediment levels in the seawater in order for successful recovery of coral fragments in a transplantation exercise, even when the field conditions are in a state of constant high turbidity.