Piyawat Sujirachato 2011: Techniques of Coral Transplantation for Maximum Efficiency. Master of Science (Marine Science), Major Field: Marine Science, Department of Marine Science. Thesis Advisor: Assistant Professor Thon Thamrongnawasawat, Ph.D. 267 pages.

This study was conducted to compare the coral transplantation methods at Sungwan beach, Koh Laan, Pattaya City, Chonburi Province for 18 months; from September 2009 to Febraury 2011 in 2 coral species; the staghorn coral Acropora formosa (Dana, 1846) and the branching coral Pocillopora damicornis (Linnaeus, 1758). Six transplantation techniques were employed to compare between the direct transplantation of coral fragments and fragments grown in nurseries before transplantation. The study revealed that in A. formosa, the highest survival rate was found in those nursed on the mid-water nursery before transplanted on iron plate, followed by those directly transplanted on iron plate and those nursed on iron fish home nursery before transplanted on iron plate, which had survival rate of 82.0, 64.7 and 59.3%, respectively. In P. damicornis, the highest survival rate was found in those nursed on the iron fish home nursery before transplanted on iron plate, followed by those nursed on mid-water nursery before transplanted on coral ball and those directly transplanted on coral ball, which had survival rate of 72.7, 64.0 and 46.7%, respectively. When the growth rates in term of ecological volume of A. formosa and P. damicornis by different transplant methods are compared, it was revealed there was statistically significant difference (p < 0.05). After small part of staghorn coral fragments were taken from mother colony, it was revealed the survival rate of mother colonies were 100% and the budding period was within 33 weeks. In addition, the factors effect on survival rate and growth rate of fragment coral transplantation are coral transplantation method, coral species and sediment rate. According to survival rate, budget, time frame and manpower, the most effective method is directly transplantation on iron plate.

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