

Utilization of Low Voltage Electricity to stimulate cultivation of Pearl Oysters *Pinctada maxima* (Jameson)

Karissa, Prawita Tasya; Sukardi, Susilo Budi Priyono, N. Gustaf F. Mamangkey, Joseph James Uel Taylor

Gadjah Mada University, Indonesia

The utilization of low voltage electricity to accelerate organism growth has been applied for ecosystem restoration, but has many mariculture applications. This study examined potential use of low voltage electricity for early growth of the pearl oyster *Pinctada maxima*. This research was conducted in August through October 2006 at a pearl oyster farm in Sanggalangit Village, Gerokgak District, Buleleng, Bali. The experiment was conducted using factorial design 3x2 with 4 replications. There were 3 treatments namely: no electricity, electricity without mineral accretion, and electricity with accretion, as well as 2 treatments with oyster ages of 6 months and 10 months. Electrical treatments used two wet batteries 11A 6V as power supplies wired in parallel. Electricity ran at 2 volts for 4 hours daily on electricity treatments both with and without accretion. The number of living oysters, shell length and wet weight were calculated and measured at the beginning and the end of experiment. Results showed that the oysters reared using low voltage electricity have significantly higher survival rate compared to the oysters reared without electricity. Oyster 6 months old reared by electricity without accretion and oyster 10 months old reared by electricity with accretion, were found to have the highest growth. These results suggest that hatchery and grow out operations could be faster and have higher survival using electrical stimulation, but more work is needed to determine the optimal conditions for oyster production for mariculture and ecosystem restoration.



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