

THE EFFECT OF MONTHLY REPRODUCTION ON THE  
CALCIFICATION BEHAVIOR OF THE  
REEF CORAL POCILLOPORA DAMICORNIS

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## ABSTRACT

The scleractinian coral Pocillopora damicornis was used in successive 50-min incubations under ambient light conditions at different times of the lunar month. Calcification in P. damicornis was affected by short-term (< 1 hr) variations in light intensity due to variations in cloud cover or rain. P. damicornis calcification rates may be related to both current light intensity and previous exposure to light.

Overall, calcification rates were highest during the peak of planula release around the third lunar quarter and low during lunar phases while eggs and planulae were growing.

Metabolic quotients in P. damicornis were low, indicating lipid metabolism, when the planulae were growing; and high, indicating carbohydrate metabolism, when the coral was merely holding or releasing the planulae and when calcification rates were highest. P. damicornis appears to be energy-limited, having to divert energy for calcification into reproduction.

Results of this study suggest a mechanism by which cyclical reproduction may produce banding in scleractinian corals by affecting the amount of available energy for organic matrix production and calcification.