

THE ECOLOGICAL IMPORTANCE OF AN INVERTEBRATE CHEMOAUTOTROPHIC SYMBIOSIS TO PHANEROGAM SEAGRASS BEDS

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ABSTRACT

The symbiotic chemoautotrophic bivalve *Loripes lacteus* was found to inhabit *Cymodocea nodosa* seagrass beds in a lagoon in Upper Corsica. Clams were observed at a mean density of 775 ind m⁻². Mean clam wet weight for the site was 0.099 mg and the gill, organ in which are found the sulfur-oxidizing endosymbiotic bacteria, accounted for 32.5% of total body weight. Total wet tissue weight due to these animals in this sediment was therefore in the order of 77 g m⁻². The percentage of carbon is 11.2% of wet weight. A rough estimate of net clam production within the seagrass bed yields a value of 1.73 g C m⁻² yr⁻¹. The autotrophic potential of *Loripes lacteus* was calculated to be in the order of 47.2 g C m⁻² yr⁻¹, which represents roughly 16% of the seagrass bed's primary production. The role of these symbioses, in terms of carbon flux, within phanerogam seagrass beds is discussed.