



FLORIDA SEA GRANT COLLEGE

A B S T R A C T

TITLE: THE USE OF OZONE TO DISINFECTANT VIBRIO VULNIFICUS AND TO DEPURATE THE SOUTHERN QUAHOG CLAM, MERCENARIA CAMPECHIENSIS

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An increasing number of shellfish-borne human Vibrio infections in recent years has led to a search for an effective way of purifying shellfish. Depuration is a purification process whereby shellfish are allowed to filter feed in clean water, and purge themselves of accumulated materials and organisms.

Inactivation of Vibrio vulnificus was performed in ozonated seawater. The disinfectant produced by ozone reduced bacterial numbers to undetectable levels (<3 cfu/100 ml) after 4 minutes of contact time at oxidant concentrations as low as 1.0 mg/L.

Southern quahog clams, Mercenaria campechiensis, were artificially infected with V. vulnificus and placed in a depuration system using ozonated recirculated artificial seawater. Treatment with ozone reduced the numbers of V. vulnificus by an average of 2.0 log units in the shellfish meats in addition to natural die-away in control tests. The oxidant levels did not adversely affect shellfish pumping during the depuration process.